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REPORT ON THE 1990 DISCHARGES FROM MUNICIPAL SEWAGE TREATMENT PLANTS IN ONTARIO

VOLUME I

SUMMARY OF PERFORMANCE AND COMPLIANCE

JULY 1992

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REPORT ON THE 1990 DISCHARGES FROM MUNICIPAL SEWAGE TREATMENT PLANTS IN ONTARIO

Volume I : Summary of Compliance Assessment

Report Prepared By:

Water Resources Branch
in co-operation with
Regional Operations Division
Ontario Ministry of the Environment

JULY 1992

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ABSTRACT

This report summaries the performance of all Ministry or municipally operated sewage treatment plants (STPs) that discharge effluent directly into the surface waters of Ontario in 1990. Plant performance was assessed against either the limits stipulated in the Certificate of Approval (C of A) or in the absence of C of A limits, the guidelines in MOE Policy 08-01 "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and the Canada-US Agreement on Great Lakes Water Quality. Effluent quality was assessed against three conventional parameters : Biochemical Oxygen Demand (BOD_5), Suspended Solids (SS) and Total Phosphorus (TP).

This report is divided into two volumes. Volume I provides a summary of performance and compliance. Volume II presents the individual plant performance data.

In Volume I, forty six (46) STPs were assessed against C of A limits and 337 STPs were assessed against MOE Policy effluent guidelines. Compliance status, remedial action programs, waste loadings and plant bypasses were summarized. Historical trends on STP compliance rates and waste loadings discharged to the environment were analyzed. STP operation and abatement program were explained. Types of sewage treatment plants used in Ontario and their effectiveness were also discussed. All STPs were ranked by their performance using an Overall Performance Index (OPI). The OPI provides an indication of how "well or poorly" the plant performed against effluent requirements. The ten best and worst performing STPs are identified in the report.

In Volume II, individual plant bypass and performance data are presented.

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EXECUTIVE SUMMARY

This report assesses the performance of Ontario's sewage treatment plants (STPs) during 1990 in meeting effluent discharge limits and guidelines. The analysis covers STPs operated by municipalities, as well as those operated by the Ministry of Environment on behalf of a municipality. This annual publication is prepared by MOE's Water Resources Branch, in conjunction with its Regional Operations Division.

This report is not an assessment of impacts of STP discharges on the environment. It is an assessment report on the performance of the plants against the limits/guidelines the plants are required to meet.

STP performance was assessed against the effluent limits stipulated in an individual plant's Certificate of Approval (C of A) or, in the absence of a Certificate, against the general discharge guidelines contained in MOE Policy 08-01 "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and the Canada-US Agreement on Great Lakes Water Quality (Annex 3) for Total Phosphorus. In all cases, plant operations were judged against the discharge of conventional pollutant parameters : Biochemical Oxygen Demand (BOD_5), Suspended Solids (SS) and Total Phosphorus (TP).

This report is divided into two volumes. Volume I provides a summary of performance and compliance. Volume II presents the individual plant performance data.

The report reviews the effluent discharges from a total of 383 STPs: 46 STPs were assessed against C of A limits and 337 STPs were assessed against MOE Policy effluent guidelines. The report does not address the operation of an additional 35 STPs: 24 STPs did not discharge to the surface waters and are therefore not required to report effluent data; 2 STPs were commissioned in 1990 and operated only part of the year; 9 STPs did not provide sufficient data for assessment. STPs that discharge continuously into lakes, rivers or other surface waters are required to provide at least nine months of effluent data, while seasonal/annual lagoons that discharge into surface waters must submit at least one set of monitoring data per period of discharge.

In this report, a STP is designated as being a non-compliance plant if its effluent concentration or discharge loadings exceed one or more of the parameters in the guidelines or limits that the plant is required to meet at any time during the year. A single exceedance would place a STP into the non-compliance category. The word "compliance" as used in this report does not indicate that no contraventions of the legislation and regulations have occurred, but rather that the data recorded in the report do not, in themselves, demonstrate that there have been contraventions.

Of the 46 STPs judged against their C of A limits, 33 (72%) complied with both their concentration and loading limits. Of the 337 STPs assessed against MOE Policy 08-01 guidelines, 253 (75%) were in total compliance. Overall, 286 STPs out of 383 STPs met all effluent discharge limits for a 75% compliance rate.

The remaining 97 STPs assessed in this report were designated as being non-compliance at some time during 1990. Of these, 93 (97%) had begun remedial action plans to expand or upgrade their treatment processes, or optimize their plant operations.

The MOE Investigations and Enforcement Branch investigated 8 alleged infractions in 1990. Two (2) charges were laid, but subsequently were dismissed by the court. MOE is now appealing the second case.

As part of its trends analysis, the report assesses the 1990 discharges from all STPs (both those subject to Cs of A and those regulated by MOE Policy guidelines) which submitted sufficient data assessed against MOE Policy 08-01 effluent guidelines and compares their performance with similar data collected the previous years. In 1990, 292 STPs (or 76% of those assessed) were in complete compliance. This represents a significant improvement over 1989 when 256 STPs (70%) were in compliance. The primary reason for the gain is the improved compliance with TP limits, which increased from 70% in 1989 to 86% in 1990. The compliance rates for BOD_5 and SS remained relatively constant for both years.

All STPs which submitted sufficient effluent concentration data were ranked according to an Overall Performance Index (OPI), calculated using the ratio of the annual discharges of conventional pollutants (BOD_5 , SS and TP) against their limits or guidelines. The OPI provides an indication of how well a plant performed against its discharge requirements.

The report also contains an analysis of historical waste loadings to the province's eight primary drainage basins, as well as an assessment of the efficiency of the five major sewage treatment systems employed in Ontario.

Finally, the report summarizes plant bypass occurrence data. Bypasses (the discharge of raw sewage directly to surface waters) may occur without any treatment except grit removal (primary bypass), or following solids removal in the primary clarifiers but without secondary biological treatment processing (secondary bypass). In both cases, the bypassed sewage will be disinfected by chlorination before they are discharged. Of the 176 STPs assessed, 90 reported bypasses in 1990 (75 STPs with potential to bypass did not supply MOE with any bypass data). The total volume of primary and secondary bypasses represent 0.3% and 0.4% of the total volume of fully treated effluent, respectively. Most of the bypasses occurred during the wet months of March and April.

This report is one of the annual reports published by the Ministry relating to environmental studies. Please refer to other reports such as Industrial Discharges Report, Spills Action Centre Report, Water Quality Data Report and Air Quality Data Report, in order to have an overall assessment of our environment.

1.0 INTRODUCTION

1.1 Discharge Reporting

This report is a summary of the performance of all Sewage Treatment Plants (STPs) operated in 1990 that discharge effluent directly into the surface waters of Ontario. Performance data provided the basis for assessing the compliance of STPs with effluent requirements. The report was first published in 1985 and is updated annually.

Four hundred and eighteen (418) Sewage Treatment Plants (STPs) were in operation in 1990. These STPs were operated either by the Ministry of Environment (MOE) on behalf of the municipalities or by municipalities. The operating authority is required by the Ministry of the Environment to monitor the quality of their effluent and report the results to MOE. Effluent quality is judged by comparing reported values against numerical limits. STPs were assessed against the limits of Biochemical Oxygen Demand (BOD_5) , Suspended Solids (SS) and Total Phosphorus (TP) as stipulated in their Certificates of Approval (Cs of A). In the absence of Cs of A , STPs were assessed against the BOD_5 and SS effluent guidelines in MOE Policy 08-01 "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and the TP guidelines in the Canada-U.S. Agreement on Great Lakes Water Quality, 1983. These limits are discussed in Section 2.0.

Compliance trends are indicators of abatement progress. Information in this report is used by the Ministry to set priorities for STP remedial actions and enable more plants to be in compliance with effluent requirements.

1.2 How To Use This Report

This report consists of two volumes. Volume I provides a summary of performance and compliance and Volume II presents the individual plant performance data of the 418 STPs in 1990.

The main text of this report is in Volume I. Section 3.0 summarizes the assessment results for all STPs for 1990, and ranks the ten best and ten worst performing plants. A summary of the waste loadings to the Great Lakes is given in Section 4.1. Bypass volumes, durations, frequencies and the number of STPs that experienced bypasses are presented in Section 4.2. Historical compliance status and waste loading trends are summarized in Section 5.0. Section 6.0 gives an overview of STP operation. The distribution of STPs by geographic locations, treatment types and effectiveness is discussed in Section 7.0.

Individual plant performance data are presented in a separate document, "Volume II - Data for Individual Plant Performance", consisting of three sections:

Section A Design Capacity, Existing Flow and Bypass Occurrence
Section B Primary and Secondary Bypass Data for Individual STPs
Section C STP Listing and Individual Plant Performance Data

Both volumes of this report are available from the MOE by calling the Public Information Office, 135 St. Clair Avenue West, Toronto, Ontario, M4V 1P5, (416)-323-4321 or Ministry District Offices (listed in Appendix E).

2.0 STP EFFLUENT REQUIREMENTS

2.1 Conventional Parameters and Significance

Pollution control engineers have traditionally used BOD_5 , SS and TP as parameters for the design and operation of treatment facilities. These parameters are also used as indicators of the degree of pollution in receiving waters. In this report, they are used to assess STP performance.

Biochemical Oxygen Demand (BOD_5) is a measure of the amount of oxygen required by microorganisms to reduce the organic matter in the sample in a period of five (5) days. A high concentration of BOD in the effluent is an indication of inadequate treatment. A discharge of a high BOD effluent can deplete the dissolved oxygen in the receiving waters, and in the more severe case, can cause fish kills.

Suspended Solids (SS), also known as Total Suspended Solids (TSS), is a measure of the amount of solids suspended in the sample. SS removal in effluent is important since excessive amount of solids discharged to a water course can kill fish by clogging their respiratory passages (gills), as well as causing aesthetic problems. Many trace metals and organics also have a tendency to adhere to the solids.

Total Phosphorus (TP) is a measure of the amount of all phosphorus available in the sample. Phosphorus is a nutrient that is essential to the growth of vegetation such as algae. An excessive amount of phosphorus may stimulate the over abundance of algae and weeds. Excessive algae and weeds can create large fluctuations in the dissolved oxygen (D.O.) of the receiving water (high D.O. in the day time due to photosynthesis and low D.O. at night due to respiration). Furthermore, when the algae and weeds die off in the fall, their decomposition will seriously deplete the D.O. to the extent that aquatic organisms cannot survive.

2.2 Certificate of Approval (C of A) Limits

A Certificate of Approval (C of A) is a legal document issued by MOE to approve the construction and operation of a STP. Effluent requirements have been incorporated into the Cs of A issued in recent years.

Prior to the construction of a STP, a full environmental assessment must be carried out to evaluate the plant's impact on the environment. The effluent discharge limits for each plant are based on "how much" the receiving water is capable of handling without adverse effects. The effluent concentration and/or loading limits are established during this environmental assessment process and stipulated in the C of A. The C of A requirements are generally more stringent than the MOE Policy requirements.

The STPs with C of A concentration limits on BOD_5 , SS and TP were assessed against the limits specified in the C of A. If the C of A did not have a concentration limit for any of the three parameters, the corresponding MOE Policy effluent guidelines were used for assessment.

Failure to comply with a C of A can result in enforcement action under the Ontario Water Resources Act or the Environmental Protection Act.

2.3 MOE Policy Effluent Guidelines

There are three MOE Policies which specify STP effluent guidelines.

MOE Policy 08-01 **"Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters".**

This policy describes the levels of treatment that the Ministry will require at municipal and private sewage treatment works discharging to surface water. Table 1 below lists the Effluent Guidelines for BOD_5 and SS for different treatment levels. These effluent guidelines were derived based on the effluent quality each treatment process is capable of achieving.

MOE Policy 08-04 **"Policy to Govern the Provision, Operation and Assessment of Phosphorus Removal Facilities at Municipal, Institutional and Private Sewage Treatment Works".**

This policy describes the requirements for the provision, operation and assessment of phosphorus removal facilities. The policy is being revised to reflect the Canada-U.S. Agreement on Great Lakes Water Quality requirement that effluent TP shall be assessed on a monthly basis.

MOE Policy 08-06 **"Policy to Govern the Sampling and Analysis Requirement for Municipal and Private Sewage Treatment Works (Liquid Waste Streams only)".**

This policy describes the MOE sampling and analysis requirements for municipal and private sewage treatment plants for the purpose of assessing plant performance and compliance with effluent requirements.

STPs which do not have C of A limits were assessed against these effluent guidelines as presented in Table 1.

TABLE 1: MOE POLICY EFFLUENT GUIDELINES
Based on Policy 08-01, and Canada-U.S. Agreement, 1983

Type of Treatment	BOD5 Annual Average	SS Annual Average	TP Monthly Average
PRIMARY:			
without TP removal	30% removal	50% removal	N.A.
with TP removal	50% removal	70% removal	1.0 mg/l
SECONDARY:			
without TP removal	25 mg/l	25 mg/l	N.A.
with TP removal	25 mg/l	25 mg/l	1.0 mg/l
LAGOONS:			
without TP removal	30 mg/l	40 mg/l	N.A.
continuous TP removal	30 mg/l	40 mg/l	1.0 mg/l
batch TP removal	25 mg/l	25 mg/l	1.0 mg/l

N.A. - Not Applicable

Any STPs that failed to meet the C of A limits or the guidelines for any one of the three parameters at any given time during the year are identified in this report as not in compliance for 1990.

3.0 1990 STATUS OF COMPLIANCE AND REMEDIAL MEASURES

3.1 Assessment by Certificate of Approval

Most Certificates of Approval issued before 1985 give design or operation objectives but not compliance limits. A review of MOE records showed that only 70 of the 418 plants have C of A limits. For 1990, only fifty (50) of these 70 STPs were assessed against their C of A concentration and loading limits because of a limited data analysis capability and complex requirements in some Cs of A. Thirty six (36) out of these 50 STPs have loading limits in addition to concentration limits, and 45 STPs have concentration limits for all three parameters of BOD, SS and TP. The MOE Policy effluent guidelines were used to assess the compliance of those parameters for which limits are not given in the C of A.

Three (3) STPS out of the 50 STPs assessed did not report sufficient data for concentration assessment, and 4 STPs for loading assessment. These plants are:

Amherstburg WPCP	SW Region	Concentration
Exeter Lagoon	SW Region	Concentration
Bath WPCP	SE Region	Concentration & Loading
Hallebourg Lagoon	NE Region	Loading
Jogues Lagoon	NE Region	Loading
Val-Rita Lagoon	NE Region	Loading

Plants were considered to have insufficient data if any one of the following applied:

- continuous discharge STPs with 4 or more months of data not reported
- seasonal or annual discharge lagoons that did not report any effluent concentration data (for concentration assessment) and/or volume/duration of discharge (for loading assessment)

The actual number of STPs assessed was 47 for concentration limits alone, 32 for loading limits alone and 46 for both concentration and loading limits if loading limits are stipulated in the C of A.

For concentration limits assessment, 34 STPs (72%) complied with the effluent limit requirements. Table 2-A summarizes the number of STPs comply with the C of A concentration limits for the 6 Regions. Figure 1-A is a bar chart showing the STP compliance status.

For loading limits assessment, 28 STPs (88%) were in compliance. Table 2-B and Figure 1-B show the statistics on STP compliance with loading limits.

Table 2-C and Figure 1-C show the overall compliance status for both concentration and loading limits. Thirty (33) out of 46 STPs (72%) comply with all limit requirements.

Appendix A lists all the STPs assessed by C of A limits and their compliance status for this year and last four years. It also identifies plants that have a remedial program in place. Historical compliance rates are discussed in Section 5.0.

TABLE 2–A

SUMMARY OF ASSESSMENT AGAINST
CERTIFICATE OF APPROVAL
EFFLUENT CONCENTRATION LIMITS

Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Limits for			
			All required Parameters	BOD	SS	TP
SOUTHWEST	12	10	8	10	8	9
WEST CENTRAL	8	8	4	4	6	6
CENTRAL	12	12	11	12	12	11
SOUTHEAST	6	5	3	4	3	3
NORTHEAST	10	10	7	10	8	7
NORTHWEST	2	2	1	2	2	1
TOTAL	50	47	34	42	39	37
% COMPLIED			72%	89%	83%	88% *

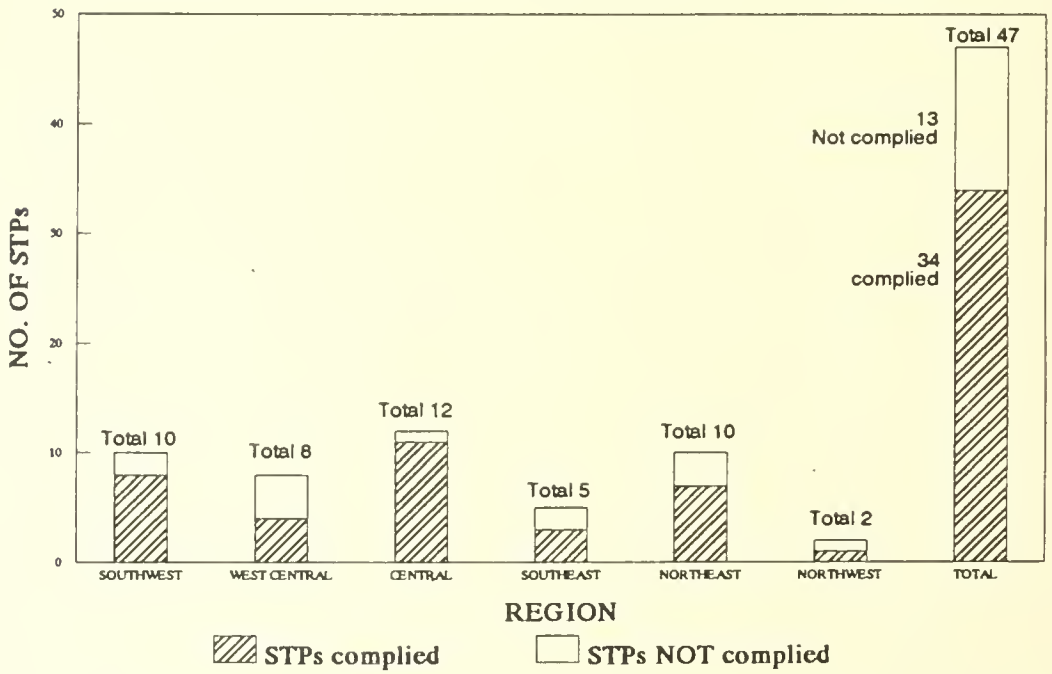
% COMPLIED is the percentage of plants complied with the perameter as compared to the no. of plants assessed.

All required parameters means BOD, SS and TP.

* Only 42 STPs had TP limit requirement.

FIGURE 1–A

ASSESSMENT AGAINST C OF A
CONCENTRATION LIMITS FOR ALL REQUIRED PARAMETERS



All required parameters means BOD, SS and TP.

TABLE 2–B

SUMMARY OF ASSESSMENT AGAINST
CERTIFICATE OF APPROVAL
EFFLUENT LOADING LIMITS

Region	Number of STPs Assessed Against				Number of STPs Meeting			
	REQUIRED LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT	REQUIRED LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT
SOUTHWEST	5	5	5	5	5	5	5	5
WEST CENTRAL	4	4	4	3	3	3	3	3
CENTRAL	12	3	3	11	12 *	3	3	11
SOUTHEAST	4	4	4	3	2	4	2	2
NORTHEAST	7	7	7	5	6 *	7	7	4
NORTHWEST	0	0	0	0	0	0	0	0
TOTAL	32	23	23	27	28	22	20	25
% COMPLIED					88%	96%	87%	93%

% COMPLIED is the percentage of plants complied with the parameter as compared to the no. of plants assessed.

* Loading limits for some STPs were not required. Refer to Appendix A for details.

FIGURE 1–B

ASSESSMENT AGAINST C OF A
LOADING LIMITS FOR REQUIRED PARAMETERS

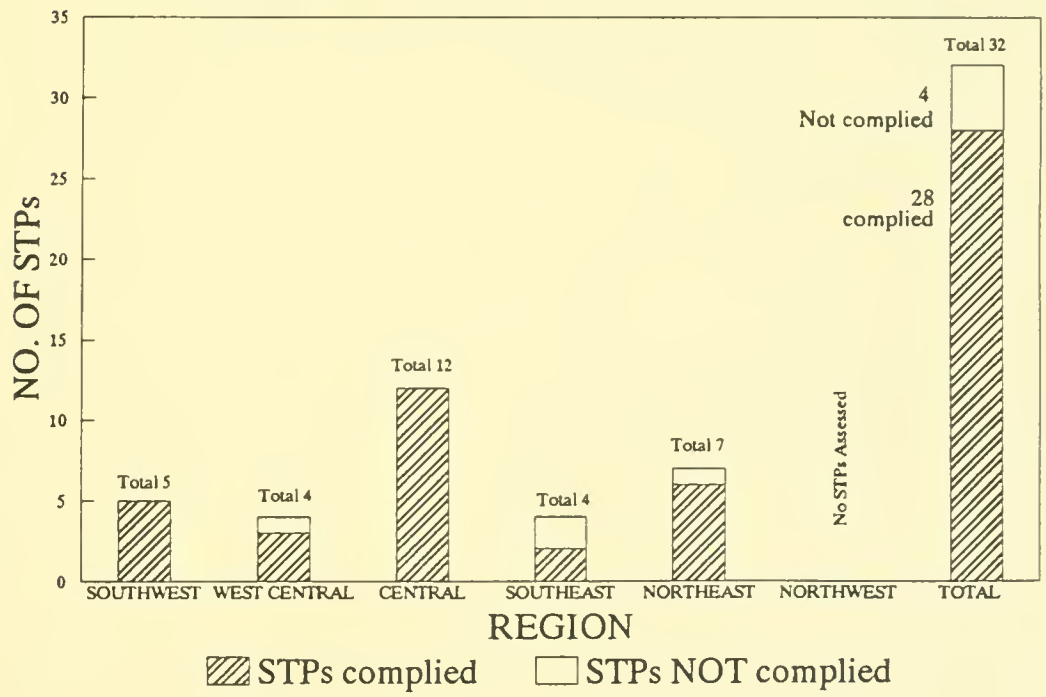


TABLE 2–C

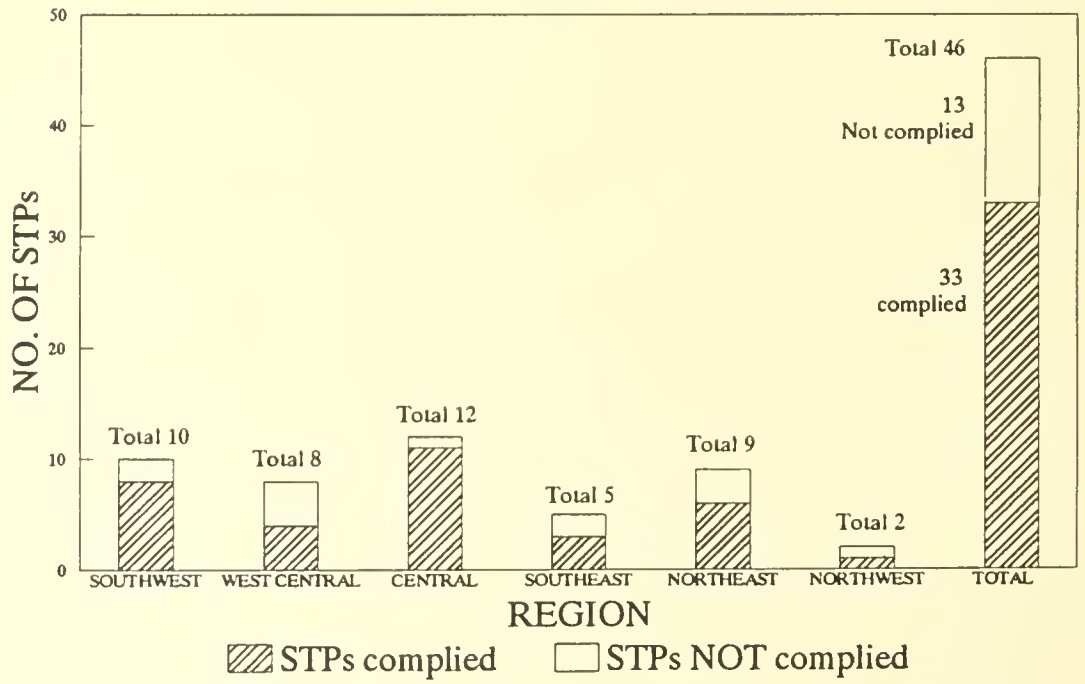
SUMMARY OF ASSESSMENT AGAINST
CERTIFICATE OF APPROVAL
EFFLUENT CONCENTRATION & LOADING LIMITS

Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Limits for		
			Concentration	Loading	Both
SOUTHWEST	12	10	8	5	8
WEST CENTRAL	8	8	4	3	4
CENTRAL	12	12	11	12	11
SOUTHEAST	6	5	3	2	3
NORTHEAST	10	9	7	6	6
NORTHWEST	2	2	1	0	1
TOTAL	50	46	34	28	33
% COMPLIED			72%	88%	72%

% COMPLIED is the percentage of plants complied with the limits as compered to the no. of plants assessed, i.e. 47 STPs for concentration, 32 STPs for loading and 46 STPs for both.

FIGURE 1–C

ASSESSMENT AGAINST C OF A
CONCENTRATION & LOADING LIMITS



3.2 Assessment by MOE Policy Effluent Guidelines

Three hundred and sixty-eight (368) STPs were not assessed for C of A limits, but rather assessed against the MOE Policy effluent guidelines. These STPs will be referred to as non-C of A plants. Thirty one (31) STPs were not assessed because of the following reasons:

a. **No Direct Discharge to Surface Water** - 24 STPs did not discharge directly to surface water. Many of these are exfiltration facilities or lagoons that did not require discharge in 1990. These plants are:

Southwest Region
Markdale Lagoon
McGregor Lagoon
Tobermory Lagoon

West Central Region
Airport WPCP

Central Region
Beaverton River 1
Beeton Lagoon
Omemee Lagoon
Schomberg Lagoon
Warkworth Lagoon
Wasaga Beach WPCP

Southeast Region
Embrun P.V. Lagoon
Maxville Waste Stab Pond
Munster Lagoon

Northeast Region
Black River Ramore
Capreon Lagoon
Dubreuilville Lagoon
Larder Lake Townsite WPCP
Mattawa Lagoon
Tamagami Lagoon
White River Lagoon

Northwest Region
Beardmore Lagoon
Caramat
Terrace Bay Lagoon
Terrace Bay WPCP

b. **Insufficient Data for Assessment** - 7 STPs did not provide sufficient data for assessment.

Southwest Region
Little River WPCP#2 *
Sarnia WPCP
Tilbury WPCP

West Central Region
Smithville Lagoon

Southeast Region
Wendover WPCP *

Northeast Region
Cochrane WPCP
Kapuskasing
- West End WPCP

* New plants started operation in 1990.

Therefore, 337 non-C of A STPs were assessed against MOE Policy effluent guidelines in 1990. Of these, 253 (75%) met the guidelines for all 3 parameters (See Table 3 and Figure 2).

Appendix B lists STPs, by Regions, that were *in compliance* with effluent requirements. A similar list of STPs *not in compliance* is provided in Appendix C. Both appendices also summarize the compliance status of the plants for the previous four years as well as the status of their remedial programs for 1990.

Remedial measures for the non-complying plants are discussed in Section 3.4.

Due to limitations on the computer system, only 19 STPs were assessed against C of A limits in 1989 and 15 STPs in 1988. To provide a more accurate historical trend comparison, all STPs including C of A and non-C of A plants were also assessed against MOE Policy effluent guidelines. A summary of this assessment is provided in Section 5.1.

TABLE 3

SUMMARY OF ASSESSMENT AGAINST
MOE POLICY EFFLUENT GUIDELINES
FOR NON–C OF A PLANTS

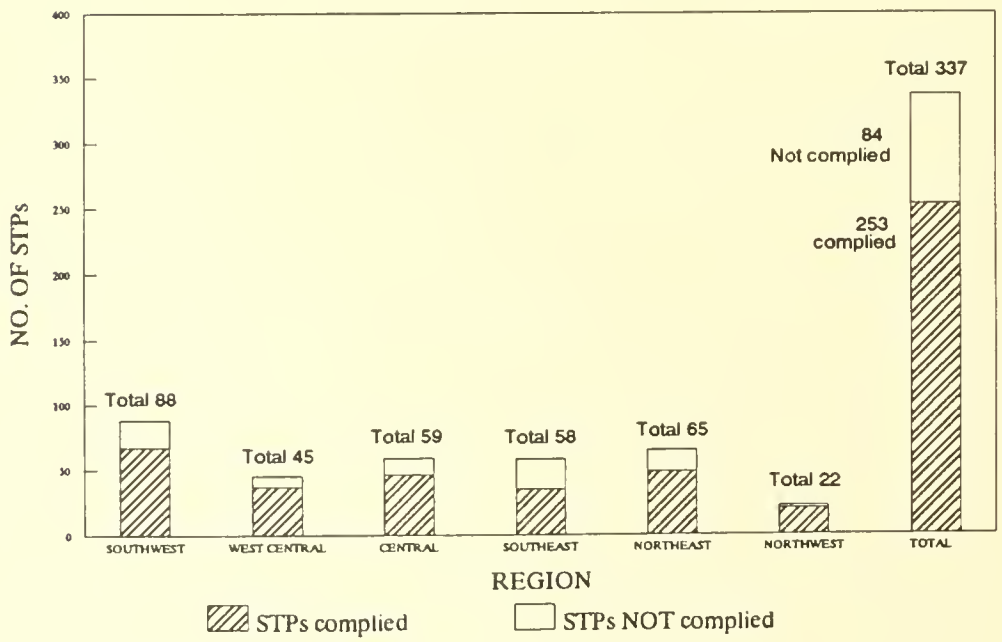
Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Guidelines for			
			All three Parameters	* BOD	* SS	+ TP
SOUTHWEST	94	88	67	87	74	79
WEST CENTRAL	47	45	37	45	42	39
CENTRAL	65	59	46	56	56	50
SOUTHEAST	62	58	35	54	46	41
NORTHEAST	74	65	48	61	57	58
NORTHWEST	26	22	20	20	21	22
TOTAL	368	337	253	323	296	289
% COMPLIED			75%	96%	88%	86%

% COMPLIED is the percentage of plants complied with the parameter as compared to the no. of plants assessed.

* BOD and SS were assessed on an annual basis
+ TP was assessed on a monthly basis; one or more months out of compliance meant the plant was out of compliance for the year.

FIGURE 2

ASSESSMENT AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON–C OF A PLANTS FOR ALL THREE PARAMETERS



3.3 Ranking of STPs by Performance

All STPs except those with insufficient data were ranked by their performance. The following procedures were used:

Step 1

The Parameter Performance Index (PPI) for each of the 3 parameters of BOD_5 ,SS and TP was calculated for each plant as follow:

$$\text{Parameter Performance Index (PPI)} = \frac{\text{Para. limit - Para. effluent conc.}}{\text{Parameter limit}} \times 100\%$$

Parameter limit was taken from the C of A or MOE Policy effluent guidelines. For simplicity, the PPI for TP was based on an annual average instead of monthly averages. Since the MOE Policy effluent guidelines for BOD and SS for primary STPs are based on percent removals, the parameter limit in calculating PPI for primary plants was estimated by multiplying the parameter of raw sewage concentration and the required percentage of removal. Loading limits were not assessed in this evaluation.

Step 2

An Overall Performance Index (OPI) was calculated for each plant using the following formula:

$$\text{Overall Performance Index (OPI)} = \frac{\text{(BOD PI) + (SS PI) + (TP PI)}}{3} \%$$

A positive OPI indicates the plant performed better than its effluent limits, while a negative OPI indicates the plant performed worse than its effluent limits.

Step 3

The 384 STPs (47 C of A plants and 337 non-C of A plants) were ranked on the basis of their OPI. Since effluent limits in the C of A were based on either environmental impact assessment or policy guidelines, the performance ranking provided an indirect measure of the environmental impacts for the C of A plants. The ten best performing STPs and the ten worst performing STPs are presented in Table 4 and Figure 3.

TABLE 4
THE TEN BEST AND WORST PERFORMING STPs

THE TEN WORST PERFORMING STPs

Name of Plant	Region	Effluent Limits mg/l BOD	SS	TP	Average Effluent Quality BOD	SS	TP	Parameter Performance Index BOD	SS	TP	OPI %
CARLETON PLACE WPCP *	SE	25.0	25.0	1.0	30.6	67.0	2.58	−22	−168	−158	−116
DUFFIN CREEK WPCP	C	25.0	25.0	1.0	47.6	47.6	1.43	−90	−90	−43	−74
POINT EDWARD WPCP *	SW	54.4	62.3	1.0	69.9	64.7	2.60	−28	−4	−160	−64
GREEN CREEK WPCP	SE	39.0	31.0	1.0	40.8	55.9	1.84	−5	−80	−84	−56
KINGSVILLE LAGOON	SW	25.0	30.0	1.0	10.7	87.2	1.26	57	−191	−26	−53
FALCONBRIDGE TOWNSITE WPCP	NE	25.0	25.0	NA	36.7	37.9	3.19	−47	−52	NA	−49
OPASATIKA LAGOON *	NE	25.0	25.0	1.0	19.6	68.3	0.82	22	−173	18	−45
KEMPTVILLE WPCP	SE	28.1	51.2	1.0	32.1	48.9	2.02	−14	5	−102	−37
CHALK RIVER WPCP *	SE	25.0	25.0	1.0	25.4	36.6	1.60	−2	−46	−60	−36
VAL−RITA LAGOON	NE	22.5	22.5	1.5	5.6	79.4	0.29	75	−253	81	−32

* MOE operated NA – Not applicable

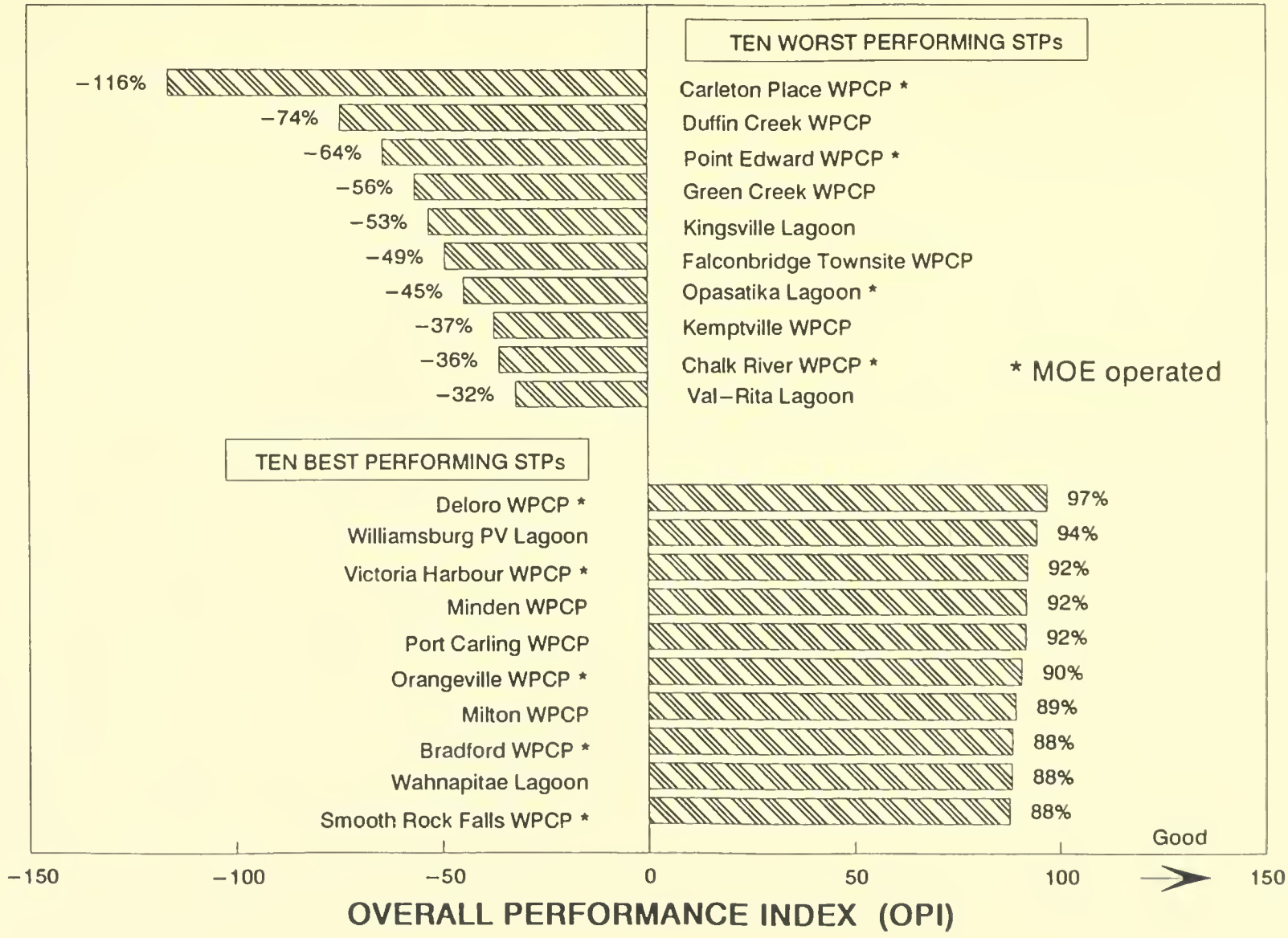
Remedial actions for these ten plants were summarized in Table 5−B page 18.

THE TEN BEST PERFORMING STPs

Name of Plant	Region	Effluent Limits mg/l BOD	SS	TP	Average Effluent Quality BOD	SS	TP	Parameter Performance Index BOD	SS	TP	OPI %
DELORO WPCP *	.SE	57.0	76.0	NA	1.4	3.0	1.41	97	96	NA	97
WILLIAMSBURG LAGOON	SE	30.0	40.0	NA	2.0	2.0	NA	93	95	NA	94
VICTORIA HARBOUR WPCP *	C	25.0	25.0	1.0	1.4	1.7	0.12	95	93	88	92
MINDEN WPCP	C	25.0	25.0	1.0	1.4	1.4	0.14	94	95	86	92
PORT CARLING WPCP	C	25.0	25.0	1.0	0.4	1.3	0.19	99	95	81	92
ORANGEVILLE WPCP *	WC	25.0	25.0	1.0	1.1	2.4	0.15	96	90	85	90
MILTON WPCP	C	25.0	25.0	1.0	1.1	2.2	0.20	95	91	80	89
BRADFORD WPCP *	C	25.0	25.0	1.0	2.6	2.3	0.16	90	91	84	88
WAHNAPITAE LAGOON	NE	30.0	40.0	NA	2.5	6.2	0.36	92	85	NA	88
SMOOTH ROCK FALLS WPCP *	NE	25.0	25.0	NA	2.2	4.1	1.76	91	84	NA	88

* MOE operated NA – Not applicable

FIGURE 3
THE TEN BEST AND WORST PERFORMING STPs



3.4 Remedial Measures

Remedial measures are required by MOE for non-complying STPs in order to improve their performance. Non-compliance may due to such things as:

- design problems such as organic or hydraulic overloading, obsolete equipment
- operational problems such as inadequate process control or equipment maintenance
- abnormal incidents such as industrial spills in the sewerage system or leaky sewers which lead to high inflows and infiltration

Design problems and leaky sewers can be corrected by capital works such as plant modification, expansion or sewer rehabilitation. Major upgrading or plant expansion is required to go through a class environmental assessment to review possible alternatives and their impact on the environment. When a decision is made, funding requirements and approval to expand must be obtained from the local Municipal Council and the MOE before detailed design and construction can begin. Major upgrading may take 3 to 5 years to complete.

Operational problems and industrial spills can be improved with better process control and maintenance, operator training and enforcement of a local Sewer Use by-law by the municipality. A model Sewer Use by-law has been developed by MOE as a reference for municipalities to adopt or draft their own Sewer Use by-law.

Table 5-A summarizes the number of STPs that exceeded discharge limits and that reported remedial actions taken. It shows that 93 out of the 97 non-complying STPs, or an average of 96% , have undertaken remedial actions.

TABLE 5-A: SUMMARY OF NON-COMPLYING STPs REPORTING REMEDIAL ACTIONS

Region	Number of C of A STPs		Number of Non-C of A STPs		% of STPs with remedial action
	exceeded limit	had remedial action	exceeded limit	had remedial action	
Southwest	2	2	21	21	100%
West Central	4	3	8	8	92%
Central	1	1	13	13	100%
Southeast	2	1	23	21	88%
Northeast	3	3	17	17	100%
Northwest	1	1	2	2	100%
Total	13	11	84	82	96%

Table 5-B summarizes the remedial actions undertaken by the ten worst performing plants identified in Section 3.3 (Table 4) and the anticipated date of compliance.

TABLE 5-B: SUMMARY OF REMEDIAL ACTIONS UNDERTAKEN BY THE TEN WORST PERFORMING STPs

Name of Plant	Remedial Actions Undertaken
Carleton Place WPCP	Existing plant will be phased out in 1995. Building of new plant underway. Anticipated compliance: 1995
Duffin Creek WPCP	Plant expansion under construction. Anticipated compliance: 1991
Point Edward WPCP	Plant to be upgraded to secondary treatment. Anticipated compliance: 1993
Green Creek WPCP	Plant to be upgraded to secondary treatment. Anticipated compliance: 1994
Kingsville Lagoon	Sewer need study and separation program underway. Anticipated compliance: 1994
Falconbridge Townsite WPCP	Plant effluent was not directly discharged to surface water. It discharged to a wastewater treatment system. Sampling point has been relocated to the outfall of this treatment system. Anticipated compliance: 1991
Opasatika Lagoon	Non-compliance due to algae bloom, a common problem in lagoons. Anticipated compliance: 1991
Kemptville WPCP	Plant to be upgraded to tertiary treatment. Anticipated compliance: 1995
Chalk River WPCP	Plant has been upgraded. Anticipated compliance: 1992
Val-Rita Lagoon	Operational procedure being upgraded. Anticipated compliance: 1991

4.0 1990 WASTE LOADINGS AND BYPASSES

4.1 Waste Loadings

Table 6 summarizes the annual average loadings of BOD, SS and TP discharged to the eight (8) minor basins of the Great Lakes. The waste loadings for each minor basin was calculated by summing the annual average loading of each plant that discharged to the basin. The total average loadings divided by the total average daily flow (ADF) gives the average concentration.

The following pie charts show the distribution of the Flow and Loading among the 8 minor basins:

Figure 4-A shows the Average Daily Flow discharged into the minor basins.

Figure 4-B shows the BOD Loadings to the minor basins.

Figure 4-C shows the SS Loadings to minor basins.

Figure 4-D shows the TP Loadings to the minor basins.

Lake Ontario, Lake Erie and Ottawa River are the three minor basins that received most (about 85%) of the sewage flow and waste loadings. Discharges to Lake Erie, Lake Huron, Lake Winnipeg East and Lake Ontario had better effluent quality. Discharges to Lake Superior, Ottawa River, and St. Lawrence River had poorer effluent quality, due to a high proportion of effluent from primary treatment plants (90%, 91% and 85% by design capacity, respectively).

TABLE 6
ANNUAL AVERAGE LOADINGS OF BOD, SS AND TP TO THE MINOR BASINS

Legend
ADF = Average Daily Flow

Minor Basin	No. of STPs	Total ADF 1,000 m3/d	Average Concentration * mg/l			Total Average Daily Loadings Tonnes/day		
			BOD	SS	TP	BOD	SS	TP
ERIE	105	952.1	12.4	12.3	0.60	11.8	11.8	0.57
HURON	114	440.7	12.4	11.4	0.64	5.5	5.0	0.28
JAMES BAY	32	60.1	24.5	30.6	1.81	1.5	1.8	0.11
LAKE WINNIPEG EAST	14	33.4	12.9	18.2	0.98	0.4	0.6	0.03
ONTARIO	75	3094.0	15.2	16.7	0.68	47.0	51.6	2.09
OTTAWA RIVER	51	618.7	35.9	48.4	1.64	22.2	30.0	1.01
ST. LAWRENCE	15	162.0	28.9	23.9	0.76	4.7	3.9	0.12
SUPERIOR	12	93.1	58.7	53.7	1.20	5.5	5.0	0.11
TOTAL	418	5,454.1				98.6	109.6	4.33

$$\text{Average Concentration (mg/l)}^{*} = \frac{\text{Total Average Daily Loadings (tonnes/d)}}{\text{Total ADF (1,000m3/d)}} \times 1{,}000$$

FIGURE 4–A

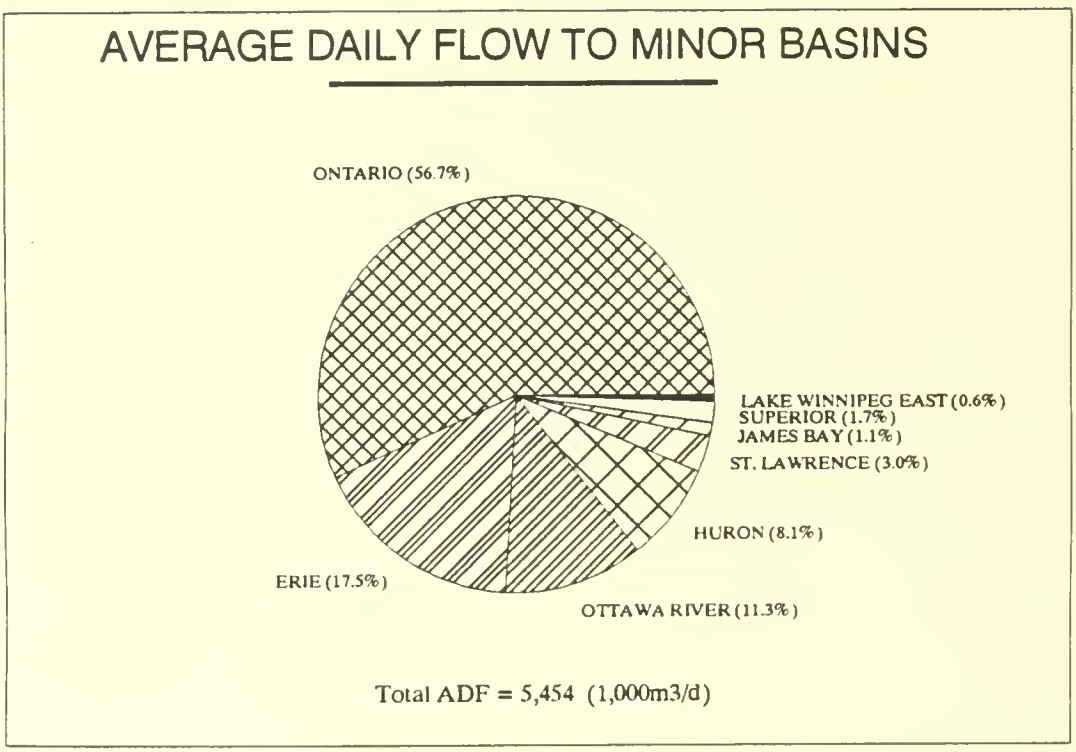


FIGURE 4–B

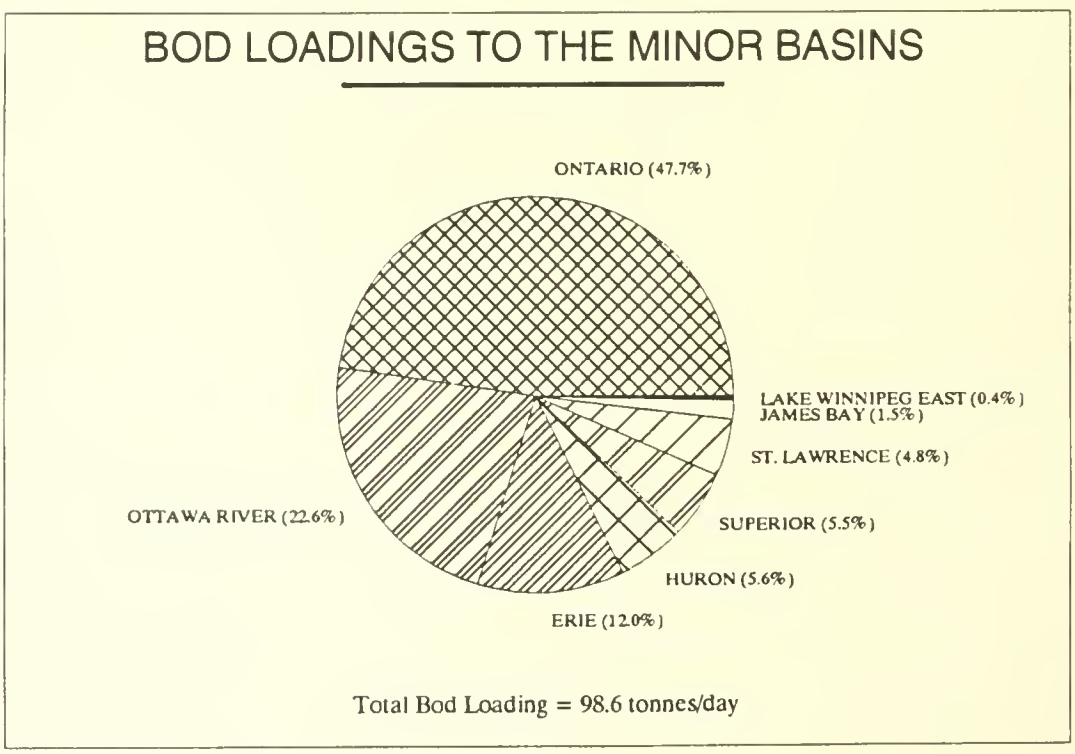


FIGURE 4–C

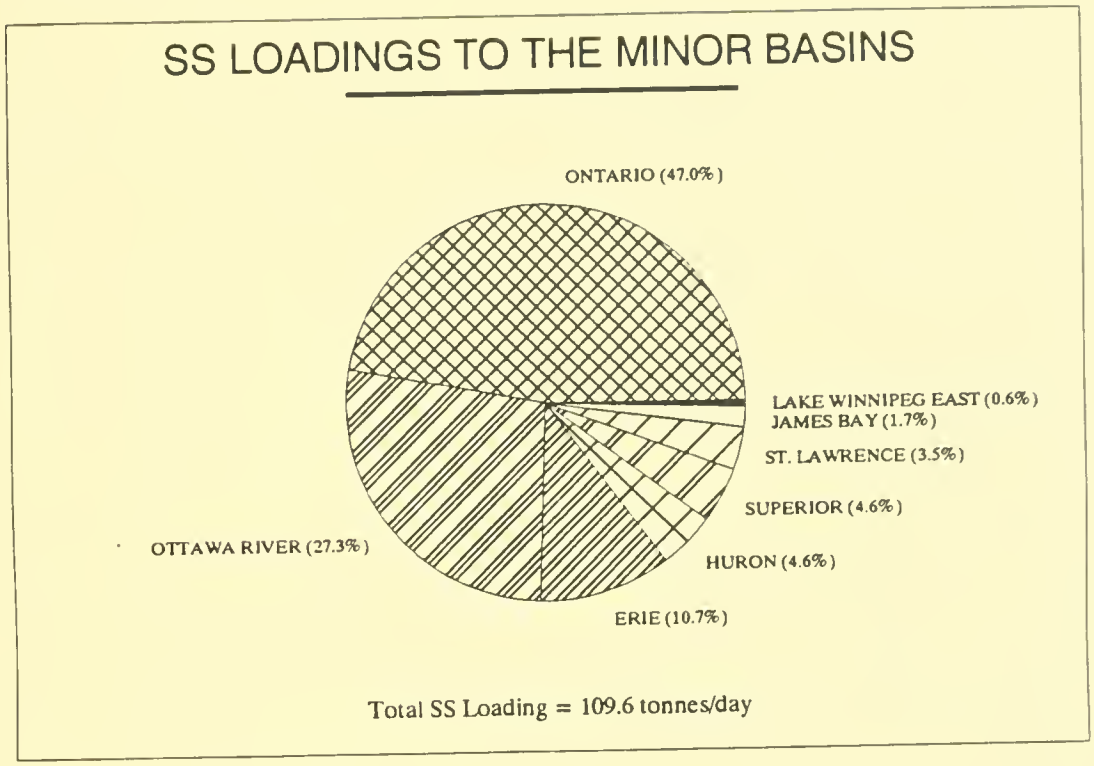
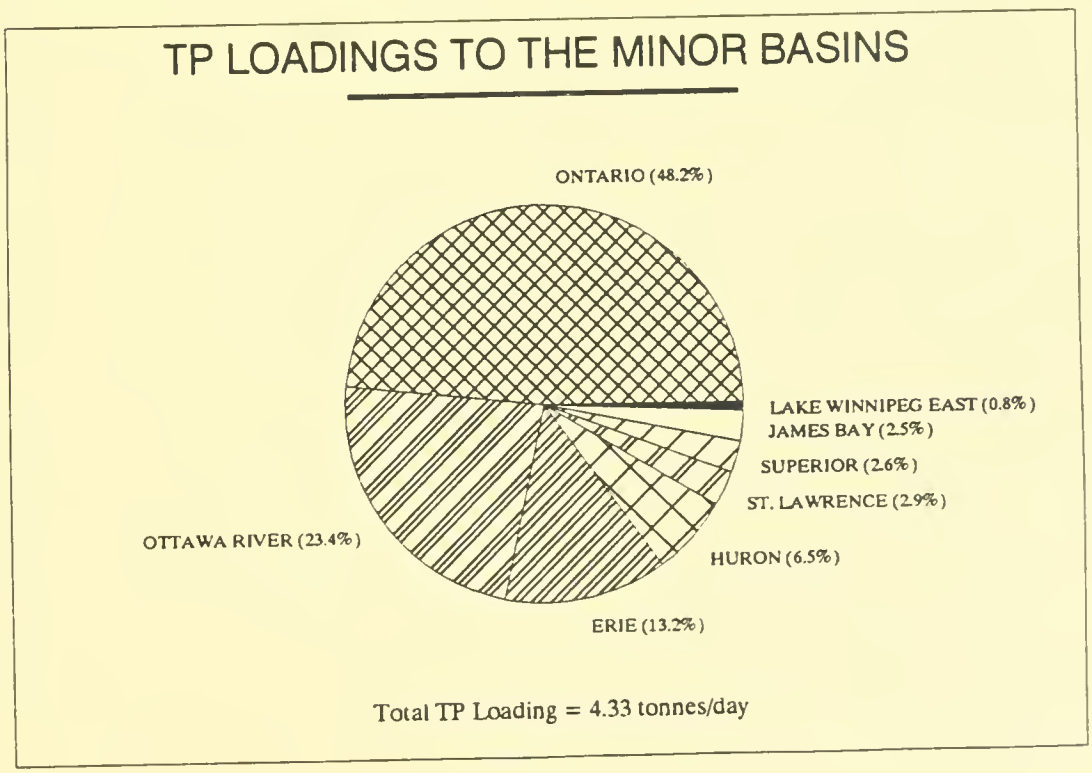


FIGURE 4–D



4.2 Bypasses

This report assessed only the bypasses that occurred within the boundary of a STP. Bypasses occurring in the sewer system, including pumping stations located outside the plant property, are considered to be combined sewer overflows and are assessed by MOE regional staff on a case-by-case basis.

Bypasses can be classified into primary and secondary bypasses. A primary bypass is defined as the discharge of raw sewage subject to no treatment except grit removal and/or chlorine disinfection. A secondary bypass is defined as the discharge of sewage that has undergone solids removal at the primary clarifiers but bypassed the biological treatment process. In most cases, bypassed wastewaters are disinfected before they are discharged.

Bypasses may occur for a number of reasons such as:

- an increase in hydraulic loading due to inflow and infiltration from a storm event or spring thaw
- operational problems, such as equipment breakdown
- population and/or industrial growth having out-paced the design capacity of the STP

Bypasses of raw sewage are rigorously avoided except in emergency situations. Emergency bypassing is permitted to protect basements from flooding, to prevent damage to equipment at treatment works or pumping facilities, or to prevent solids wash-out in the treatment works, during storm events or spring thaw.

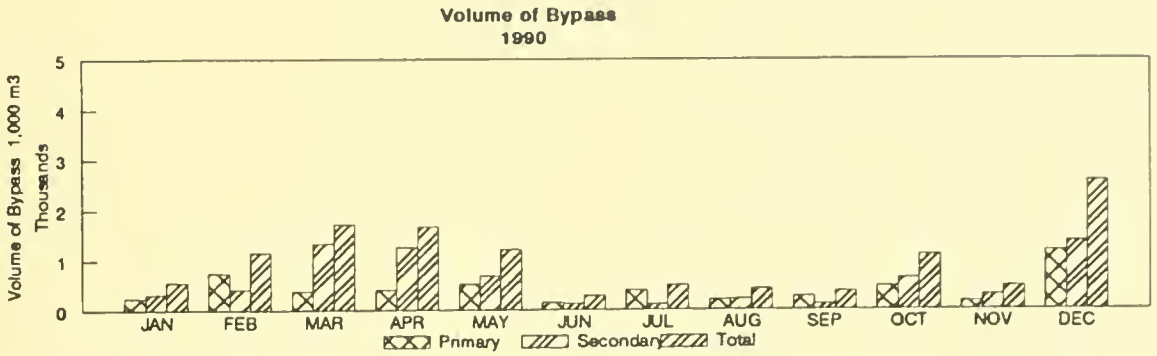
Ninety (90) STPs had bypass occurrences. The STPs that reported bypass occurrences and the volume of bypasses are listed in Appendix D. Lagoons (total 167) were designed with no bypass provisions.

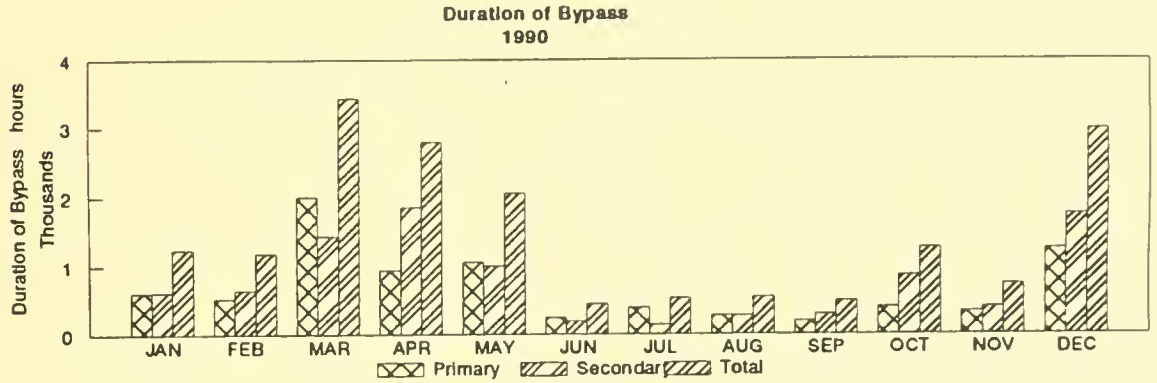
One hundred and seventy six (176) STPs reported bypass data to MOE and these data are presented in Volume II Section B. In 1990, 75 STPs (418 - 176 - 167 = 75) with potential to bypass did not report any bypass data to the MOE.

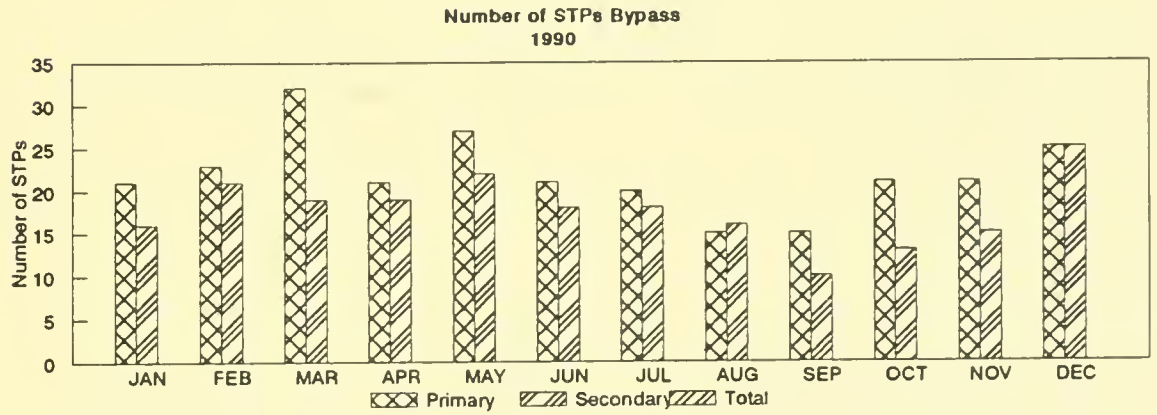
Figure 5 shows the distribution of the bypass volume, duration, number of STPs and number of times in a twelve month period. This graph indicates that the bypass events mostly occur during the wet months of March and April.

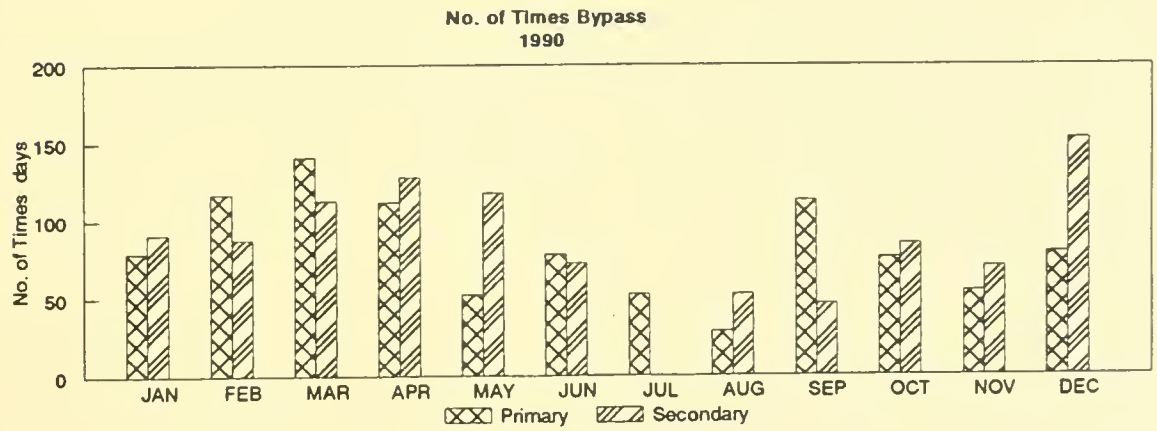
The total volume (annual) of primary bypass wastewater was 5.1 million m^3 and secondary bypass wastewater was 6.9 million m^3 which represent 0.26% and 0.35% of the volume of treated effluent. The relationship between the plant bypass volume, design capacity and existing flow are summarized in Volume II, Section A.

FIGURE 5 : BYPASS – VOLUME, DURATION, NO. OF STPs & NO. OF TIMES









5.0 HISTORICAL TRENDS

5.1 STP Compliance

The historical compliance data for C of A plants are presented in Table 7 and Figure 6. Caution should be exercised when reading Table 7 and Figure 6 because of the small number of STPs assessed against Cs of A in previous years. In 1988, the number of STPs assessed against C of A limits was 15 and increased to 19 STPs in 1989. In 1990, 47 STPs were assessed against C of A concentration limits and 32 STPs against loading limits. The non-compliance rates for both concentration and loading requirements were 27% in 1988, 16% in 1989 and 28% in 1990.

For a more accurate historical trend comparison, the performance of all STPs that provided sufficient data were also assessed against MOE Policy effluent guidelines, defined in Section 2.3. A total of 292 STPs (76%), of the 385 STPs assessed met the effluent guidelines in 1990. A summary of this assessment by region is given in Table 8 and shown in Figure 7.

Historical data (1986 - 1990) on the number of STPs exceeding the MOE Policy effluent guidelines are given in Table 9 and Figure 8. The number of STPs exceeding the guidelines diminished from 151 (42%) in 1986 to 93 (24%) in 1990. This improvement is primarily due to the significant improvement in compliance with TP limits. The number of plants out of compliance for TP was reduced from 126 (35%) in 1986 to 54 (14%) in 1990. For BOD and SS, however, non-compliance remained constant at around 4% and 12% respectively for the 5 year period.

5.2 Loading

BOD, SS, TP and hydraulic loading trends from 1987 to 1990 are presented in Figure 9. The BOD and SS loadings discharged to the minor basins increased at an average rate of about 5% per year for the previous 2 years. The hydraulic loading increased at a similar rate of 5% per year for the same period. The TP loading was reduced gradually at the rate of about 5% per year. The effluent BOD and SS concentration remained relatively constant, while effluent TP concentration improved throughout the previous 2 years. The improvement in TP concentration and loading can be attributed to the tightening of TP limits from an *annual average* of 1.0 mg/l to a *monthly average* of 1.0 mg/l as a result of phosphorus load reduction targets identified in Annex 3 of the Canada - U.S. Agreement on Great Lakes Water Quality.

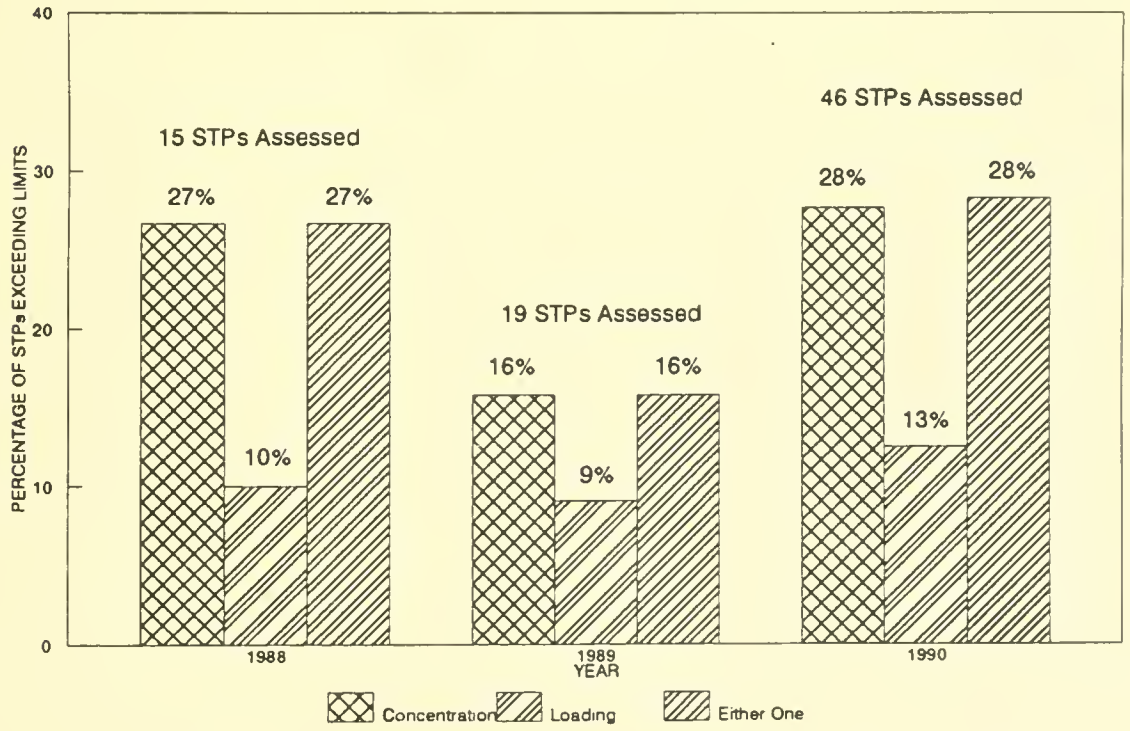
TABLE 7

HISTORICAL DATA ON
NUMBER OF SEWAGE TREATMENT PLANTS
EXCEEDING C OF A LIMITS

Year	Number of STPs Assessed			Number of STPs Exceeding Limits					
	concentration	loading	both	concentration	%	loading	%	Either	%
1988	15	10	15	4	27	1	10	4	27
1989	19	11	19	3	16	1	9	3	16
1990	47	32	46	13	28	4	13	13	28

FIGURE 6

HISTORICAL DATA ON
NO. OF STPs EXCEEDING C OF A LIMITS



"Caution should be exercised when reading TABLE 7 and FIGURE 6 because of the small number of STPs assessed in previous years."

TABLE 8

SUMMARY OF ASSESSMENT AGAINST MOE POLICY EFFLUENT GUIDELINES (ALL STPs)

Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Guidelines for			
			All three Peremeters	* BOD	* SS	+ TP
SOUTHWEST	106	98	76	97	83	88
WEST CENTRAL	55	53	43	52	50	45
CENTRAL	77	71	58	68	68	62
SOUTHEAST	68	64	39	59	51	46
NORTHEAST	84	75	55	71	65	67
NORTHWEST	28	24	21	22	23	23
TOTAL	418	385	292	369	340	331
% COMPLIED			76%	96%	88%	86%

% COMPLIED is the percentage of plants complied with the parameter as compared to the no. of plants assessed.

* BOD and SS are assessed on an annual average basis.
+ TP is assessed on a monthly average basis; one or more months out of compliance means the plant is out of compliance for the year.

FIGURE 7

ASSESSMENT AGAINST MOE POLICY EFFLUENT GUIDELINES FOR ALL STPs

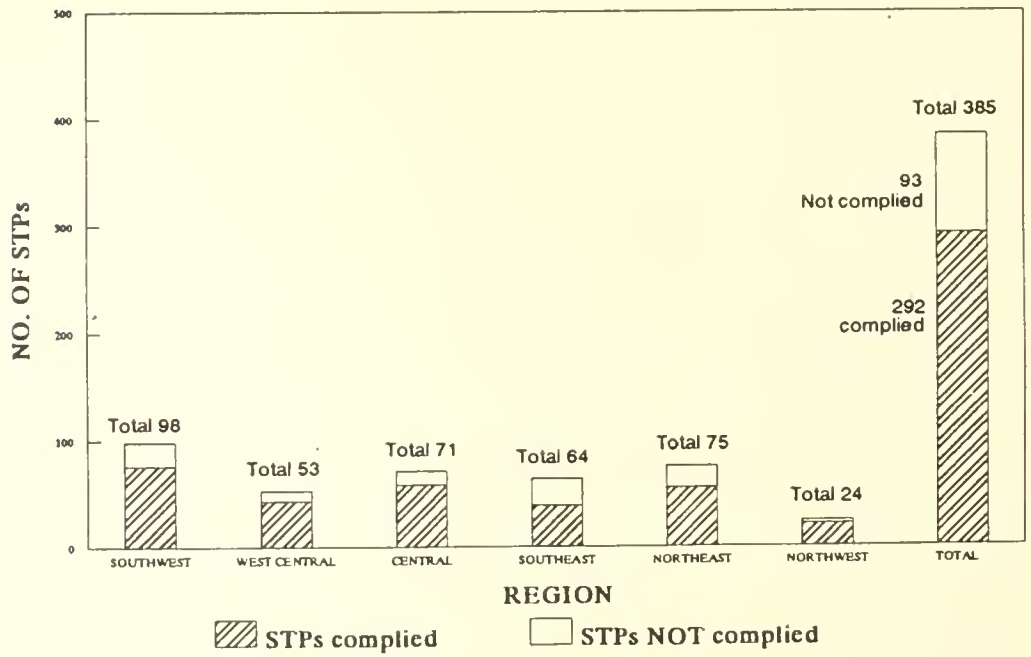


TABLE 9

HISTORICAL DATA ON
NUMBER OF SEWAGE TREATMENT PLANTS
EXCEEDING MOE POLICY EFFLUENT GUIDELINES

Year	Total Number of STPs Assessed	Number of STPs Exceeding Guidelines			
		ANY	BOD	SS	TP
1986	362	151	16	47	126
1987	371	138	17	53	100
1988	362	109	15	47	78
1989	364	108	16	41	76
1990	385	93	16	45	54

FIGURE 8

HISTORICAL DATA ON NO. OF STPs
EXCEEDING MOE POLICY EFFLUENT GUIDELINES

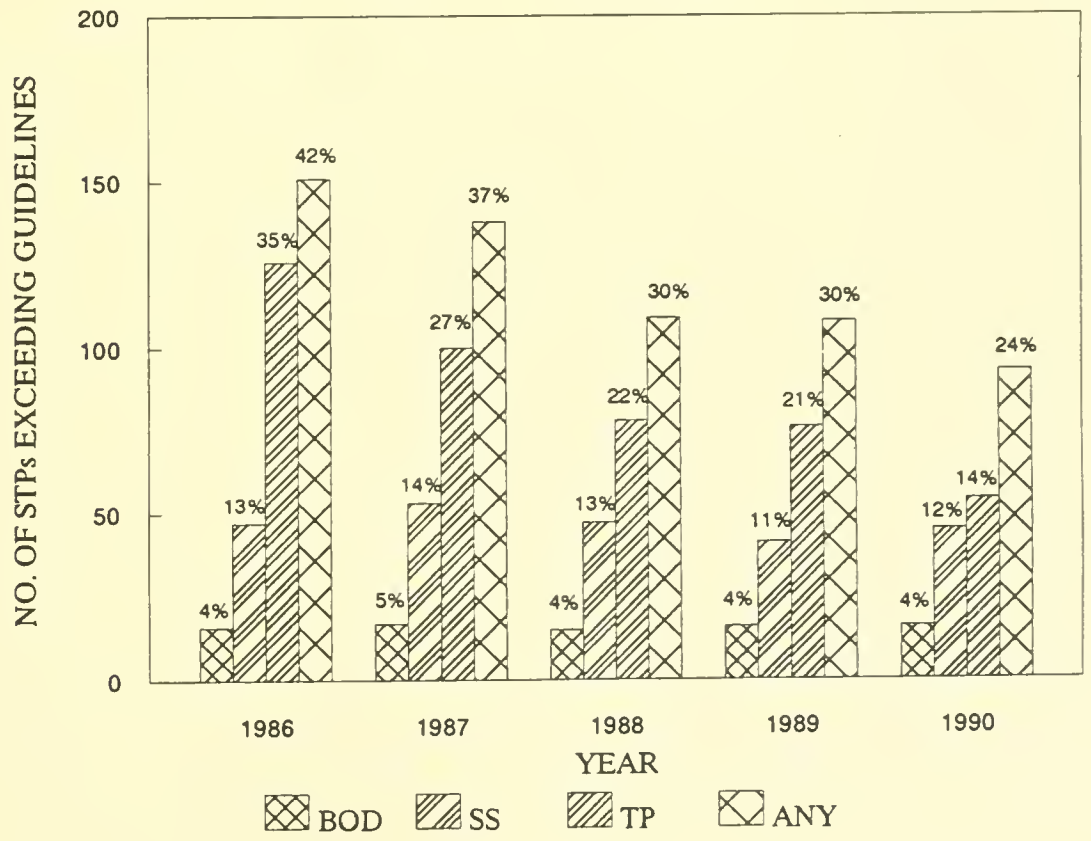
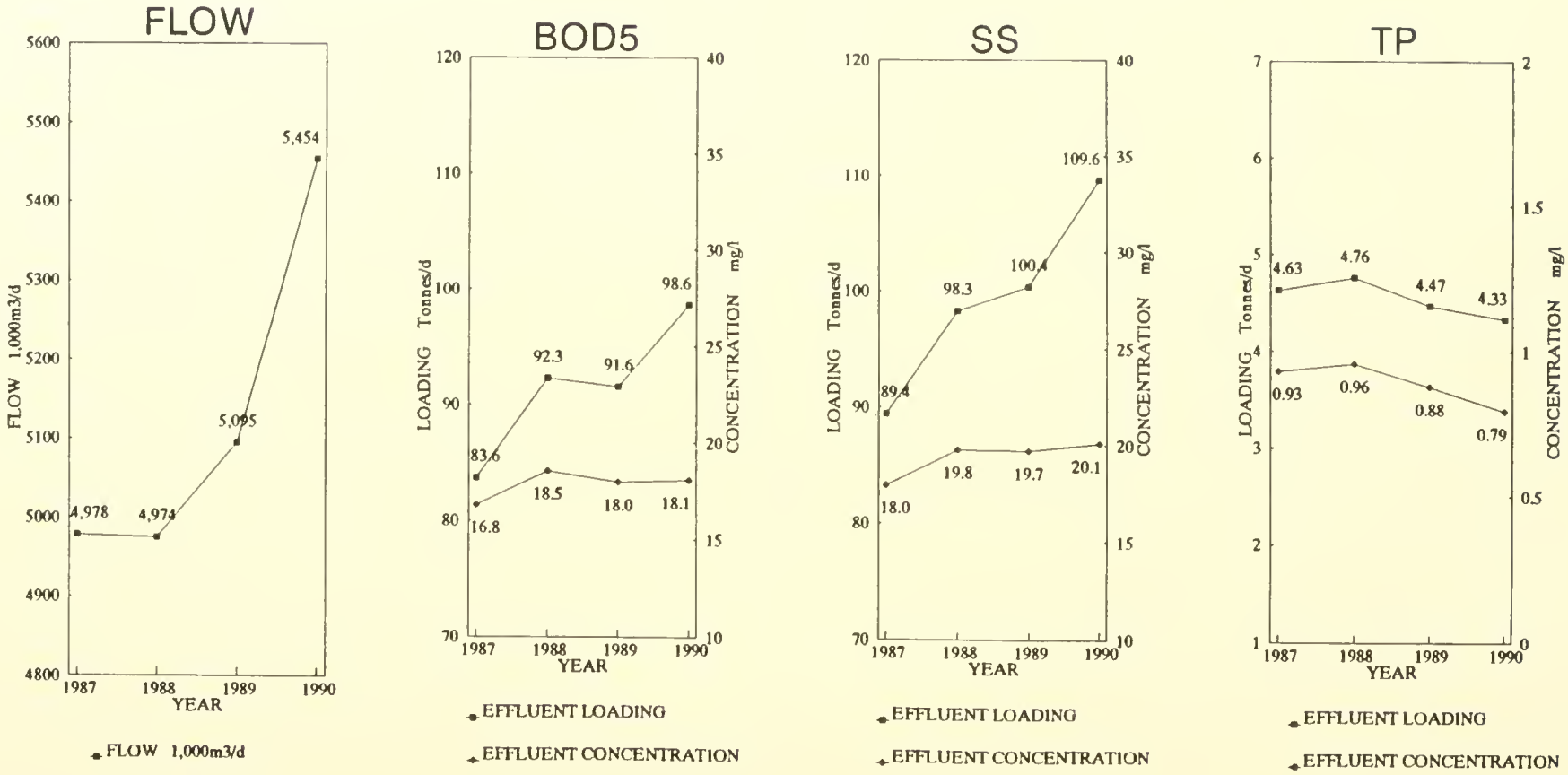


FIGURE 9

HISTORICAL LOADINGS AND EFFLUENT QUALITY TRENDS



6.0 STP OPERATION AND ABATEMENT

6.1 Operating Authority

STPs are operated by either the MOE or the municipality where the plant is located. In 1990, 242 STPs were operated by the Ministry and 177 STPs were operated by municipalities. In general, the Ministry operates facilities for small municipalities, while the larger facilities are operated by municipalities themselves. Consequently, the municipally operated plants handled about 4 times the design flow as the Ministry operated plants. Table 10 shows the treatment types and the number of plants operated by the Ministry and municipalities.

TABLE 10: NUMBER OF STPs OPERATED BY MOE OR MUNICIPALITY IN 1990

Treatment Type	Number of STPs Operated by		Total
	MOE	Municipality	
Primary	9	19	28
Secondary	105	80	185
Tertiary	14	19	33
Lagoons	112	55	167
Septic System	2	3	5
Total	242 (58%)	176 (42%)	418

A description on different treatment types is given in Section 7.2. A more detailed breakdown on the number of STPs by treatment processes, e.g., conventional activated sludge, contact stabilization, lagoons, etc., is provided in Table 11.

6.2 Abatement Program

Starting in 1989, MOE re-instituted a STP abatement program to inspect all STPs for compliance with effluent guidelines/limits and sampling and analytical requirements. MOE regional staff inspect all STPs once a year. An inspection report is issued in each case to inform the operating authority and the Ministry abatement staff of any deficiencies.

If significant abatement measures are required, the Ministry ensures that necessary actions are taken by the operating authority within a specified period. Failure of the operating authority to comply with the recommended abatement actions may result in the operating authority being investigated by the Ministry's Investigations and Enforcement Branch and prosecuted by the Ministry's Legal Services Branch, if necessary.

TABLE 11

SUMMARY OF STP AVERAGE DAILY FLOW
AND DESIGN CAPACITY BY TREATMENT TYPES

TREATMENT TYPE	NUMBER OF STPs			DESIGN CAPACITY 1,000 m3/d			AVERAGE DAILY FLOW 1,000 m3/d		
	M.O.E.	MUNICIPAL	TOTAL	M.O.E.	MUNICIPAL	TOTAL	M.O.E.	MUNICIPAL	TOTAL
PRIMARY TREATMENT	9	19	28	110.4	940.9	1051.3	74.5	944.1	1018.6
SECONDARY TREATMENT									
Contact Stabilization	6	6	12	23.1	24.5	47.6	21.5	17.7	39.2
Conventional Activated Sludge	28	50	78	1047.6	3214.6	4262.2	739.2	2945.0	3684.2
Extended Aeration/Contact Stablization	0	1	1	0.0	18.2	18.2	0.0	10.9	10.9
Extended Aeration	58	18	76	111.9	66.5	178.4	70.3	54.2	124.5
High Rate	3	2	5	18.7	77.1	95.6	14.2	71.5	65.7
Modified Activated Sludge	1	0	1	12.1	0.0	12.1	9.5	0.0	9.5
Oxidation Ditch	8	1	9	9.0	6.5	15.5	6.2	4.4	10.7
Rotating Biological Contactor	1	1	2	0.5	68.2	68.7	0.1	64.3	64.4
Trickling Filter	0	1	1	0.0	0.9	0.9	0.0	0.7	0.7
Sub-total	105	80	185	1222.9	3476.5	4699.4	861.0	3166.7	4029.7
TERTIARY TREATMENT									
Contact Stabilization + Effluent Filtration	0	1	1	0.0	1.6	1.6	0.0	2.5	2.5
Conventional Activated Sludge + Effluent Polishing	3	6	11	57.3	146.3	203.6	46.6	128.0	174.6
Extended Aeration + Effluent Filtration	0	1	1	0.0	4.1	4.1	0.0	1.4	1.4
Extended Aeration + Effluent Polishing	9	6	15	29.2	12.2	41.4	13.6	9.2	22.8
Oxidation Ditch + Effluent Polishing	1	0	1	2.0	0.0	2.0	1.7	0.0	1.7
Sutton Process	1	3	4	0.8	5.7	6.5	0.4	4.4	4.8
Sub-total	14	19	33	89.4	170.1	259.5	62.3	145.4	207.7
LAGOONS									
Aerated Cell plus Lagoon	13	8	21	38.4	23.3	61.7	33.5	17.6	51.1
Aerated Lagoon	4	3	7	8.5	12.7	21.2	5.8	10.8	16.6
Conventional Lagoon Annual Discharge	9	3	12	4.0	15.4	19.4	2.9	0.9	3.8
Conventional Lagoon Continuous Discharge	5	10	15	7.0	30.4	37.5	11.1	22.7	33.8
Conventional Lagoon Seasonal Discharge	73	26	99	69.2	194.7	263.9	54.5	28.7	83.2
Exfiltration Lagoon	5	4	9	4.4	3.6	8.0	3.9	3.7	7.6
Lagoon and Spray	3	1	4	1.5	0.4	1.9	1.5	0.0	1.5
Sub-total	112	55	167	133.1	280.4	413.5	113.2	84.5	197.7
COMMUNAL SEPTIC SYSTEM	2	3	5	2.0	1.0	3.1	0.1	0.3	0.5
TOTAL	242	176	418	1,558	4,869	6,427	1,111	4,343	5,454

6.3 Enforcement

Any major plant operational problems or environmental degradation are documented by MOE regional field staff in an Occurrence Report. The Investigations and Enforcement Branch (IEB) of the MOE is alerted to action through this Occurrence Report. Following an investigation, charges may be laid if:

- the violation poses a significant risk or adverse effect to the environment or human
- the violation is deliberate in nature or due to some degree of negligence
- the violation is repeated or warning is disregarded
- the violator has concealed or purposely provided wrong information to the MOE
- the violator has an unsatisfactory record of complying with Ministry requirements or orders

The IEB investigated 8 alleged infractions in 1990, and charges were laid in 2 cases. Details of these two prosecutions are given in Table 12.

TABLE 12: ENFORCEMENT ACTIVITIES AGAINST MUNICIPAL SEWAGE TREATMENT PLANTS IN 1990

Municipality	offense Description	Disposition
Regional Municipality of Sudbury, NE Region	Discharge at pumping station	Case dismissed
Regional Municipality of Sudbury, NE Region	Discharge of lagoon contents	Case dismissed, under appeal

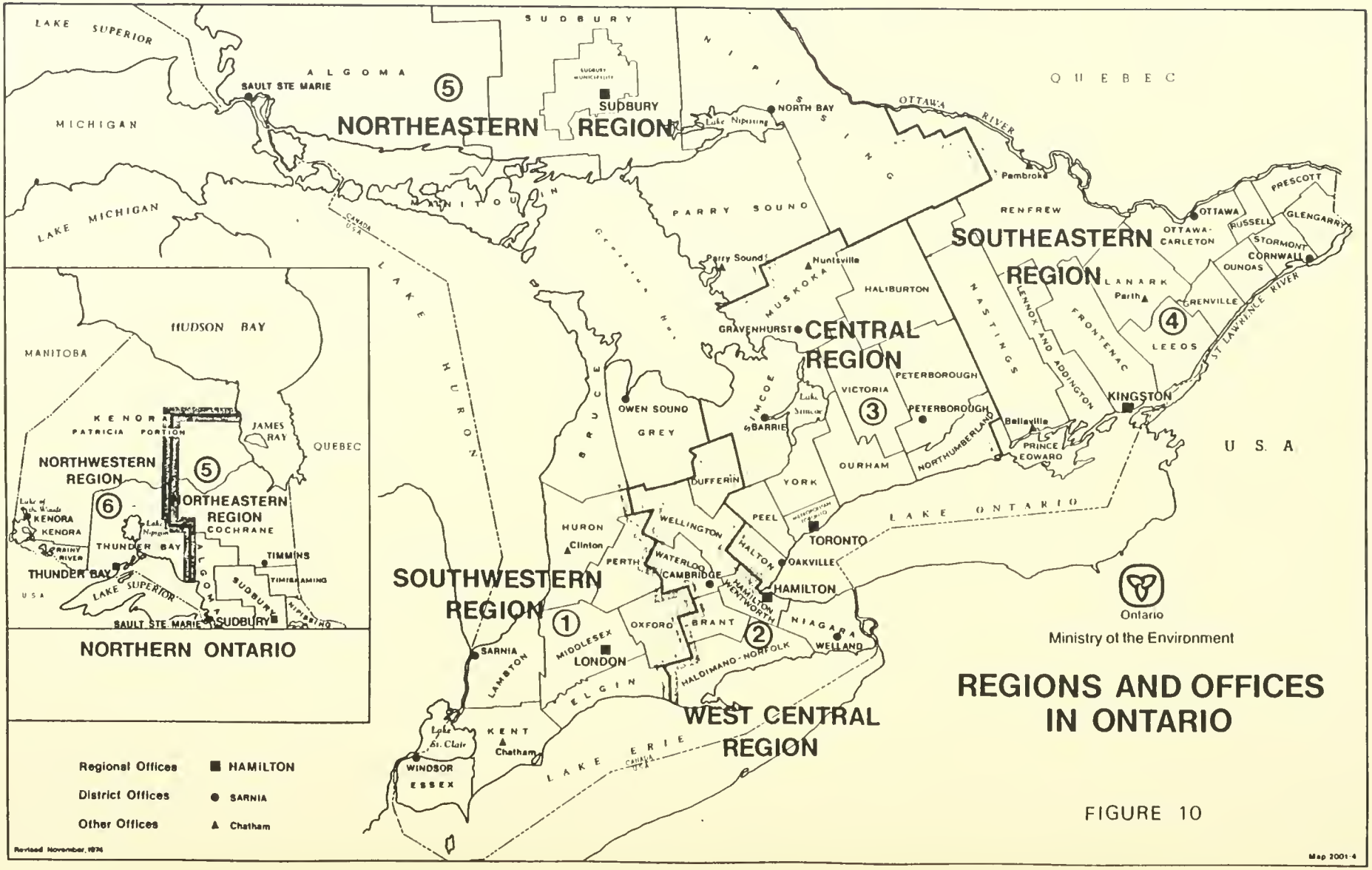

LAKE SUPERIOR
ALGOMA
SAULT STE MARIE
MICHIGAN
LAKE MICHIGAN
SUDBURY
NORTHEASTERN REGION
SUDBURY
NORTH BAY
QUEBEC
OTTAWA RIVER
Pembroke
RENFREW
PARRY SOUND
Parry Sound
Huntsville
MUSKOKA
HALIBURTON
GRAVENHURST
CENTRAL REGION
SOUTHEASTERN REGION
OTTAWA
OTTAWA-CARLETON
PRESCOTT
RUSSELL
GLENGARRY
STORMONT
CORNWALL
DUNDAS
LANARK
Perth
GRENVILLE
LEEDS
ST LAWRENCE RIVER
LAKE HURON
OWEN SOUND
GREY
BRUCE
SIMCOE
Lake Simcoe
BARRIE
VICTORIA
PETERBOROUGH
PETERBOROUGH
NASTINGS
LENNOX AND ADDINGTON
FRONTENAC
KINGSTON
Belleville
PRINCE EDWARD
NORTHUMBERLAND
DURHAM
DUFFERIN
YORK
PEEL
TORONTO
U.S.A
LAKE ONTARIO
HURON
Clinton
WELLINGTON
PERTH
WATERLOO
CAMBRIDGE
HALTON
OAKVILLE
HAMILTON
HAMILTON WENTWORTH
NIAGARA
WELLAND
SOUTHWESTERN REGION
OXFORD
BRANT
MIDDLESEX
LONDON
HALDIMAND-NORFOLK
SARNIA
LAMBTON
ELGIN
KENT
Chatham
Lake St. Clair
WINDSOR
ESSEX
LAKE ERIE
WEST CENTRAL REGION
HUDSON BAY
MANITOBA
KENORA PATRICIA PORTION
JAMES BAY
QUEBEC
NORTHWESTERN REGION
NORTHEASTERN REGION
COCHRANE
KENORA
THUNDER BAY
RAINY RIVER
TIMMINS
TIMISKAMING
NIPISSING
SUDBURY
SAULT STE MARIE
LAKE SUPERIOR
USA
NORTHERN ONTARIO
Regional Offices ■ HAMILTON
District Offices ● SARNIA
Other Offices ▲ Chatham
Revised November, 1974
Ontario
Ministry of the Environment
REGIONS AND OFFICES IN ONTARIO
Map 2001-4

FIGURE 10

7.0 SEWAGE TREATMENT PLANT SECTOR PROFILE

7.1 Geographic Distribution

Ministry of the Environment jurisdiction in the province is geographically divided into six regions as shown in Figure 10. The distribution of the 418 STPs among the 6 regions and the proportion of sewage flows treated by each region are shown in Figure 11. Southwestern Region has the most number of STPs (25%) while Central Region handled the most flow which equalled to 46% of the total flow.

7.2 Distribution of STPs by Treatment Types

For the purpose of this report, municipal sewage treatment plants were broadly classified into five (5) major treatment types, namely, Primary, Secondary, Tertiary, Lagoons, and Communal Septic Systems.

Primary Treatment is the treatment of sewage by mechanical screening and sedimentation in primary clarifiers only. This process can remove a high percentage of suspended solids but little colloidal and dissolved organic matters.

Secondary Treatment is the treatment of sewage by mechanical aeration process in which biological degradation of soluble organic matter takes place, followed by solids settling in secondary clarifiers. Primary treatment is provided in most secondary plants.

Tertiary Treatment is the enhanced treatment of sewage after secondary treatment to achieve an even higher degree of BOD_5 , SS and TP removal. In Ontario, tertiary treatment is usually provided by sand filtration or a polishing lagoon. Guelph WPCP is the only one where tertiary treatment is provided by the rotating biological contactor (RBC) process.

Lagoons treat sewage by biological processes in one or a series of relatively shallow basin(s). The amount of air required for biological degradation of organic matter is provided in most cases by the presence of algae. Mechanical aeration devices are used in a small number of lagoons to supplement the dissolved oxygen requirement. The amount of air needed for the process is significantly lower than the secondary treatment plants, even in the mechanically aerated lagoons. Consequently, a longer retention time (30 days or longer as compared to 24 hours or less for secondary plants) is needed to provide satisfactory removal of soluble contaminants such as BOD_5 . Lagoons are widely used in small communities because of their relatively low construction and operating costs. However, because of the large surface area required, they are not used in urban areas or large municipalities.

Communal Septic Systems consist of a single storage settling tank in which organic solids are settled and decomposed by anaerobic bacterial action. Communal septic systems are used in small communities only. Effluent is percolated through tiles installed beneath the earth surface.

Phosphorus removal is a process in which either iron or aluminium solutions are added to the sewage to reduced the effluent TP concentration. TP removal is provided in 281 of the 418 STPs in Ontario.

A major proportion of the sewage generated in Ontario is subject to a biological treatment process (81.4% by volume), by means of Secondary Treatment (73.9%), Tertiary Treatment (3.8%) and Lagoons (3.6%). Primary Treatment and Septic Systems account for 18.7% and 0.01% by volume, respectively. Figure 12-A shows the proportion of sewage treated by the different treatment types. Figure 12-B to Figure 12-D show the proportion of BOD, SS and TP loadings discharged by the different treatment types. Primary plants treated 18.7% of the sewage flow but contributed 42.1% of the BOD loadings, 40.4% of the SS loadings and 32.4% of the TP loadings. Table 11 gives a summary of the Average Daily Flow and Design Flow by the major treatment types.

7.3 EFFECTIVENESS OF DIFFERENT TREATMENT TYPES

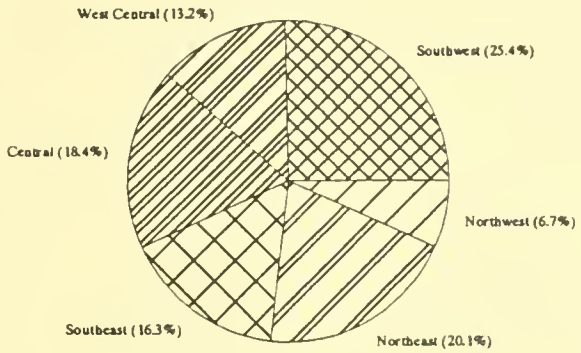
The quality of effluent achievable by a STP depends on the type of treatment process used and how well the plant is designed, constructed, maintained and operated. When properly operated, the plants with a higher degree of treatment produce better effluent quality. The capital and operation/maintenance costs also increase as the degree of treatment provided increases.

In this report, the STPs are classified into five major treatment types according to the treatment process they used. Figure 13-A & 13-B show the average effluent quality and the % removal for the five major treatment types. Tertiary treatment provides the highest degree of treatment, followed by secondary treatment, lagoons, and communal septic systems, with primary treatment as the lowest. Not all STPs have TP removal. STPs with TP removal achieve a higher percentage removal and a better effluent quality than STPs without TP removal, for the same treatment type.

Table 13 summarizes the number of non-compliance STPs (based on MOE Policy criteria) by design capacity and treatment types. The summaries are illustrated in Figure 14-A to Figure 14-E. Tertiary plants had the highest compliance rate at 94% while Septic Systems had the lowest rate at 40%. Primary plants had the second lowest compliance rate at 57%. The compliance rates for the primary plants and communal septic systems may be biased by the small number of plants in those categories.

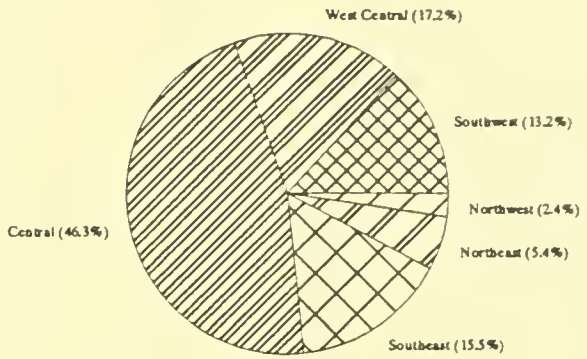
FIGURE 11

GEOGRAPHIC DISTRIBUTION
NUMBER OF STPs



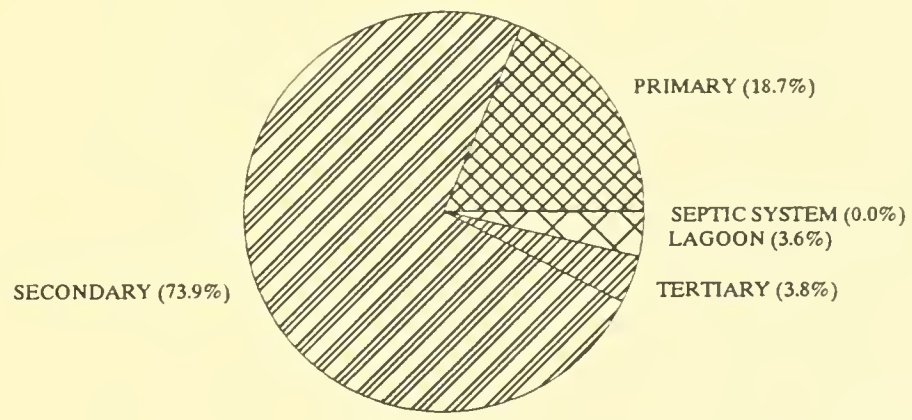
Total Number of STPs = 418

GEOGRAPHIC DISTRIBUTION
AVERAGE DAILY FLOW



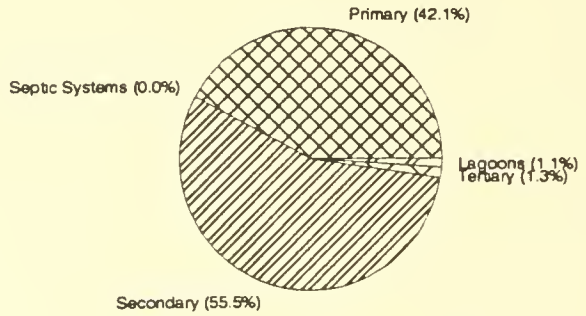
Total ADF = 5,454 x 1,000 m3/d
(1,200 migd)

FIGURE 12–A
PROPORTION OF SEWAGE FLOW (ADF)
TREATED BY DIFFERENT TREATMENT TYPES



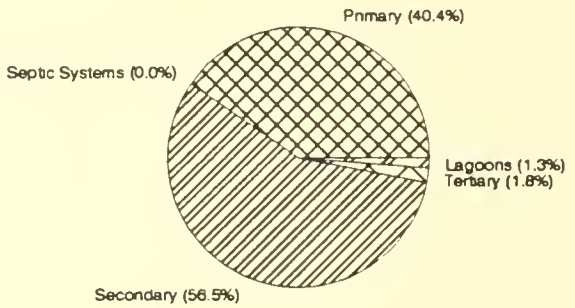
Total Average Daily Flow = 5,454 x 1,000 m3/d (1,200 migd)

FIGURE 12–B BOD LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES



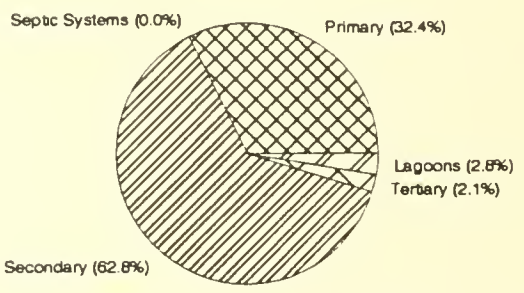
Total BOD Loadings = 98.6 tonnes/day

FIGURE 12–C SS LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES



Total SS Loadings = 109.6 tonnes/day

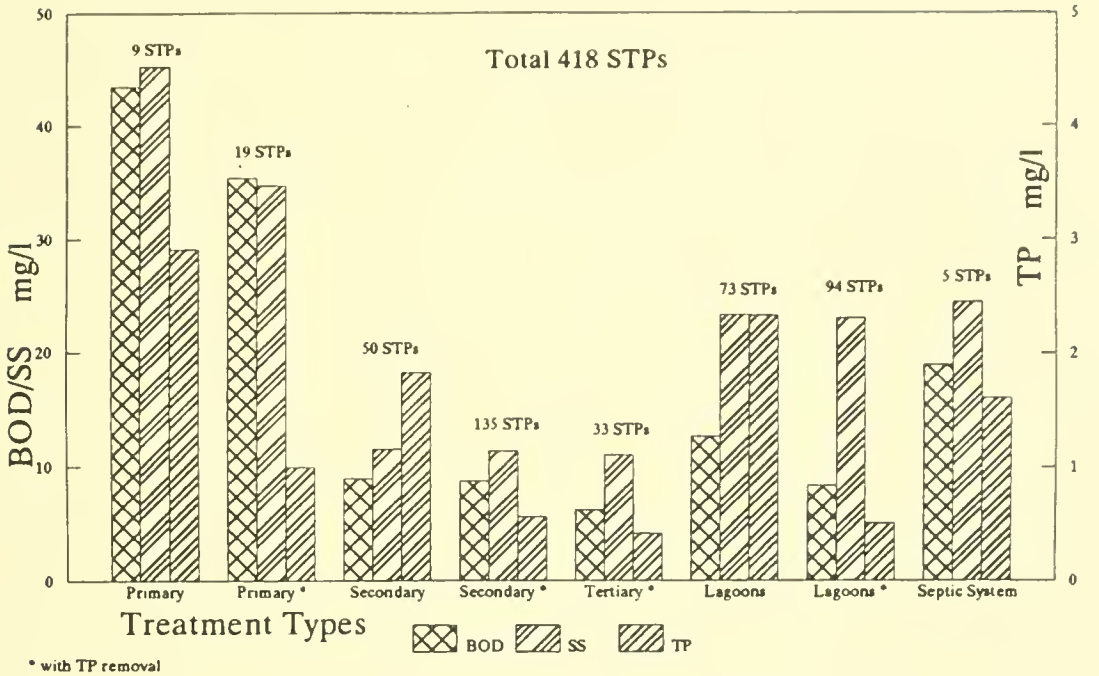
FIGURE 12–D TP LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES



Total TP Loadings = 4.3 tonnes/day

FIGURE 13–A

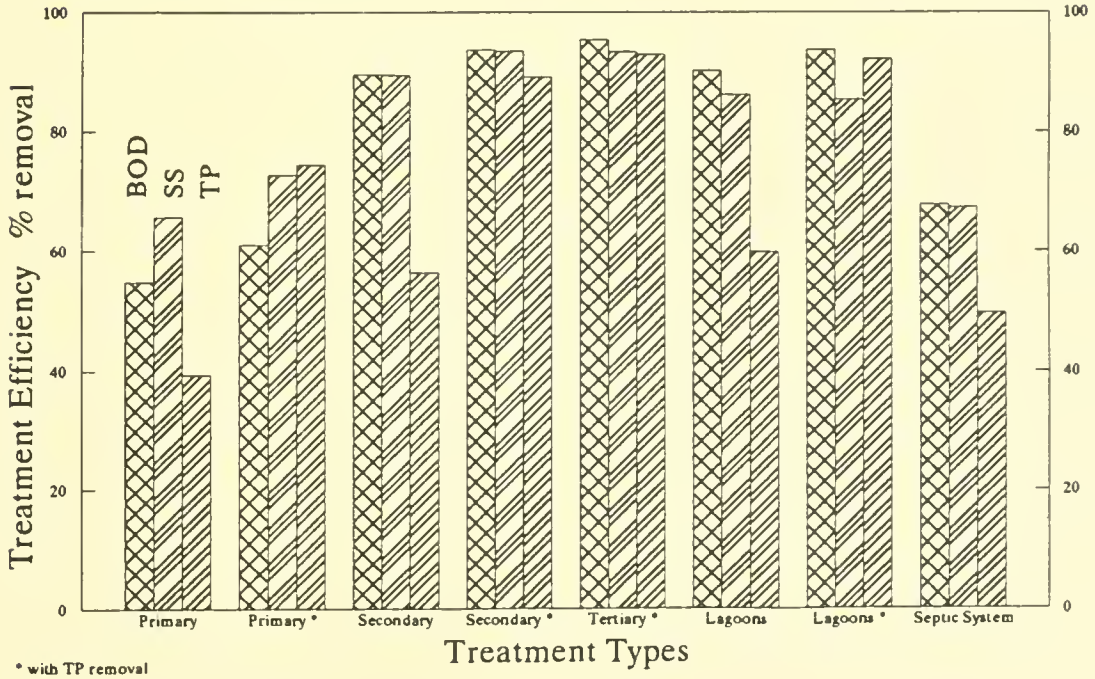
AVERAGE EFFLUENT QUALITY FOR
DIFFERENT TREATMENT TYPES



* with TP removal

FIGURE 13–B

AVERAGE EFFICIENCY FOR
DIFFERENT TREATMENT TYPES



* with TP removal

TABLE 13: NUMBER OF STPs EXCEEDING CONCENTRATION REQUIREMENTS BY DESIGN CAPACITY AND TREATMENT TYPES

DESIGN CAPACITY	TREATMENT TYPE									
	Primary		Secondary		Tertiary		Lagoons		Septic Systems	
Non-complying Plants										
> 45.4 (1000 m3/d)	3 (7)	43%	5 (22)	23%	0 (1)	0%	0 (1)	0%	0 (0)	0%
4.54 – 45.4 (1000 m3/d)	5 (12)	42%	14 (62)	23%	2 (11)	18%	6 (15)	40%	0 (0)	0%
< 4.54 (1000 m3/d)	4 (9)	44%	20 (101)	20%	0 (21)	0%	37 (151)	25%	3 (5)	60%
Total Non-complying	12	43%	39	21%	2	6%	43	26%	3	60%
Complying Plants	16	57%	146	79%	31	94%	124	74%	2	40%

( ) = the number of STPs in this catagory.
1 migd = million imperial gallon per day
= 4.54 x 1,000 m3/d

Assessment Criteria:
C of A STPs used C of A limits
Non C of A STPs used M.O.E. Policy Effluent Guidelines

FIGURE 14-A

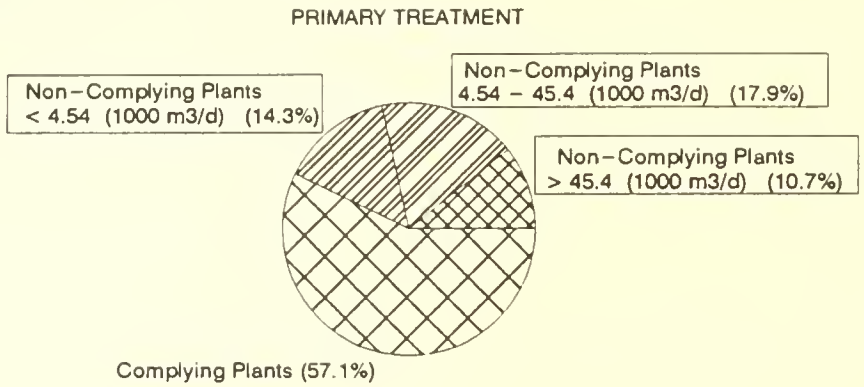


FIGURE 14-B

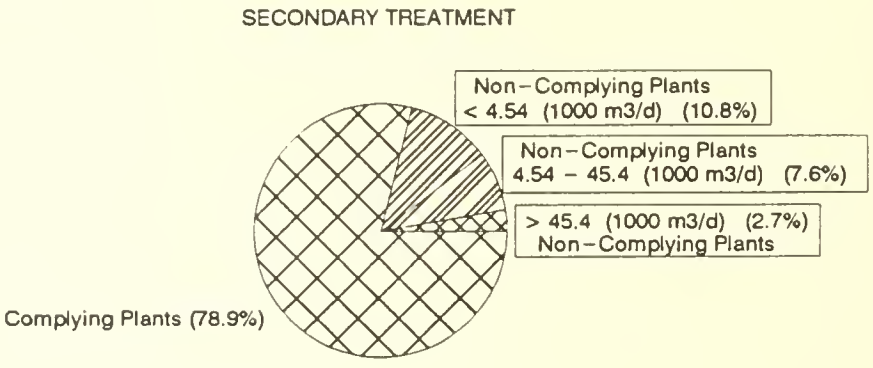


FIGURE 14–C

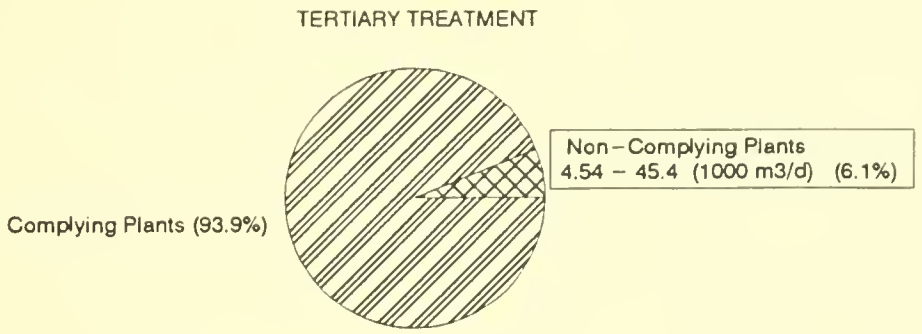


FIGURE 14–D

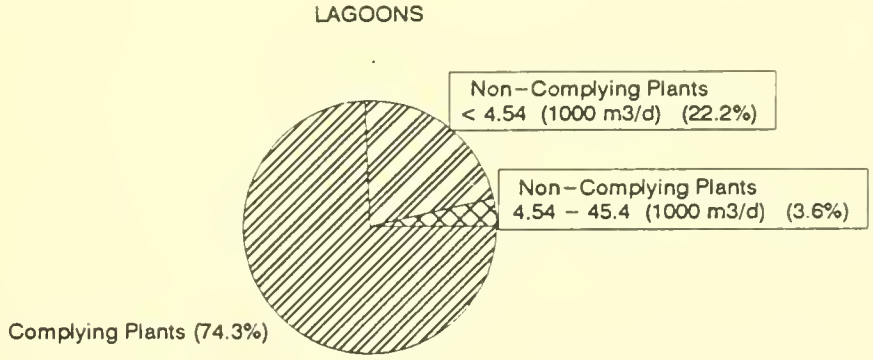
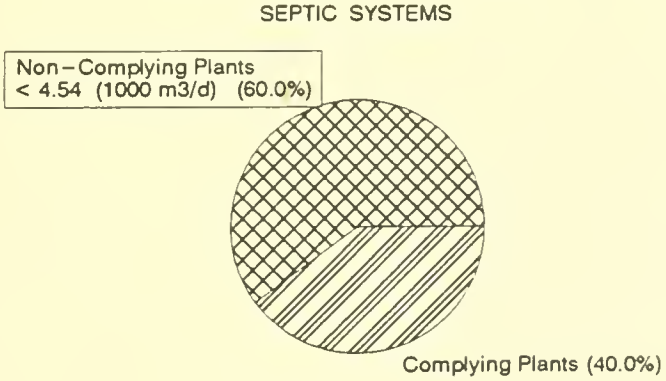


FIGURE 14–E



8.0 INQUIRIES

Inquiries about individual STPs may be directed to the corresponding Ministry Regional Offices or District Offices. The addresses and phone numbers of the six regions and their district offices are listed in Appendix E.

Volume II of this report, **"Data for Individual Plant Performance"**, is available separately. Copies of both volumes of this report are available from:

Public Information and Inquiry Services
Ministry of Environment
135 St. Clair Avenue West, 2/F
Toronto, Ontario M4V 1P5

Phone : (416)-323-4321
Fax : (416)-323-4643

9.0 REFERENCE

For further information on industrial discharges, including the Ministry's **"Report on the 1990 Industrial Direct Discharges in Ontario"** and other environmental issues, please contact the Ministry's Public Information Office listed above.

GLOSSARY OF TERMS

ADF	average daily flow, expressed as 1,000 m^3/day.
assessment	evaluation of sewage treatment plant performance by comparing the effluent quality against C of A limits or MOE Policy Effluent Guidelines.
BOD_5	Biochemical Oxygen Demand, a measurement of the amount of oxygen required to oxidize the organic matters in a sewage sample in a 5 day period, expressed as mg/l (see Section 2.1 for the significance of the parameter).
bypass, duration	number of hours bypass occurred in a sewage treatment plant.
bypass, occurence	number of days bypass occurred in a sewage treatment plant.
bypass, primary	the discharge of raw sewage subject to no treatment except grit removal and/or chlorination.
bypass, secondary	the discharge of sewage that has undergone solids removal at the primary clarifiers of a STP but bypassed the biological treatment process.
Certificate of Approval (C of A)	a legal document issued by the MOE to signify the approval of the construction and operation of a STP.
C of A Plants	STPs that have a Certificate of Approval (C of A) with non-compliance effluent limits specified in the C of A.
concentration limit	a preset limit in terms of the concentration of the parameter that the plant effluent shall not exceed.
communal septic system	a single storage tank in which the organic solids are settled and decomposed by anaerobic bacteria action.
compliance	meeting the effluent discharge guidelines, limits and/or requirements.
Control Document	an order issued by the Investigation and Enforcement Branch (IEB) of MOE to a STP with specific compliance action.
design capacity	the hydraulic capacity of a STP that is designed to handle, expressed as 1,000 m^3/day.
effluent	the treated sewage discharged to a receiving water body.

GLOSSARY OF TERMS - continued

insufficient data — a STP is deemed to have insufficient data for assessment if it missed reporting 4 or more months of data in a 12 month period for a continuous discharge plant, or it missed reporting any effluent concentration data and/or volume/duration of discharge for a non-continuous discharge plant such as seasonal lagoon.

lagoon — a constructed earthen basin(s), in which solids are settled and soluble organic matters are biologically decomposed.

loading — the amount of waste discharged to the receiving water body, expressed as kg/d or tonne/d.

loading Limit — a preset limit in terms of loading of the parameter that the plant discharge shall not exceed.

minor basins — receiving water bodies within the Great Lakes and broadly classified into 8 minor basins.

Municipality — means the corporation of a county, metropolitan area, regional area, district area, city, town, village, township or improvement district and includes a local board thereof and a board, commission or other local authority exercising any power with respect to municipal affairs or purposes, including school purposes, in an unorganized township or unserveyed territory.

MOE — the Ontario Ministry of Environment

MOE Policy Effluent Guidelines — the effluent guidelines (BOD and SS) in Table 1 of MOE Policy 08-01 and the effluent requirement for TP in Canada-U.S. Agreement on Great Lakes Water Quality 1983.

non-C of A Plants — STPs that do not have a Certificate of Approval (C of A), or plants with a C of A but do not have non-compliance effluent concentration limits specified in the C of A.

non-compliance — not meeting the effluent discharge guidelines, limits and/or requirements.

Operation Authority — the agency (either MOE or municipality) who is in charge of the operation of the STP.

primary treatment — removal of solids in the raw sewage by mechanical screening or sedimentation in a primary clarifiers.

GLOSSARY OF TERMS - continued

Province — the Province of Ontario.

raw sewage — sewage received at the STP. Raw sewage can contain sanitary sewage, commercial and industrial liquid wastes, ground water infiltration and run-offs from road surfaces.

secondary treatment — treatment in addition to primary treatment. Secondary treatment comprises biological degradation of soluble organic matters, followed by solids settling in secondary clarifier.

self-monitoring program — a program by which the Operation Authority is required to collect and analyze effluent samples periodically to monitor the performance of the STP, and to report the sample data to the MOE.

SS — suspended solids, expressed as mg/l (see Section 2.1 for the significance of this paramter).

STP Sewage Treatment Plant — a facility in which sewage is purified to the standard stipulated by the MOE.

tertiary treatment — treatment in addition to secondary treatment. In Ontario, tertiary treatment comprises sand-filtration or effluent polishing in a lagoon (except in Guelph WPCP, see Section 7.2, page 34).

TP — total phosphorus, the amount of dissolved and particulate, organic and inorganic phosphorus in a sewage sample.

APPENDIX A

SUMMARY OF

STP PERFORMANCE

AGAINST

CERTIFICATE OF APPROVAL LIMITS

1990

APPENDIX A

SUMMARY OF STP PERFORMANCE AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 1. SOUTHWESTERN

FOR COMPLYING PLANTS

Legend
- • non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
ALVINSTON WPCP	M.O.E.	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
AYLMER LAGOON	M.O.E.	Y	Y	Y	NR	NR	NR	NCA	•	NCA	NCA	YES	
CRAIGLEITH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	
DUNDALK LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
PORT BURWELL WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	YES	
ST THOMAS WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	Y	NCA	NCA	NO	
TAVISTOCK LAGOON	M.O.E.	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
WHEATLY WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	

FOR NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
AMHERSTBURG WPCP	MUNICIPAL	ID	Y	Y	NR	NR	NR	NCA	Y	NCA	NCA	YES	
CHATHAM WPCP	MUNICIPAL	Y	•	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	92
EXETER LAGOON	MUNICIPAL	Y	ID	Y	NR	NR	NR	NCA	NCA	NCA	NCA	YES	
KINGSVILLE LAGOON	MUNICIPAL	Y	•	•	NR	NR	NR	NCA	•	NCA	NCA	YES	

APPENDIX A

SUMMARY OF STP PERFORMANCE
AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 2. WEST CENTRAL

FOR COMPLYING PLANTS

Legend
- * non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
ANGER AVE.WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
ELMIRA WPCP (COMBINED FLOW)	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	
PORT WELLER WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	Y	NCA	NCA	NO	
STAMFORD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	91

FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
CALEDONIA WPCP	M.O E.	*	*	*	NR	NR	NR	NCA	NCA	NCA	NCA	YES	9101
NIAGARA-ON-THE-LAKE WPCP	MUNICIPAL	*	*	NA	*	*	NR	NCA	NCA	NCA	NCA	NO	
PORT DALHOUSIE WPCP	MUNICIPAL	*	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	
WELLAND WPCP	MUNICIPAL	*	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	YES	

APPENDIX A

SUMMARY OF STP PERFORMANCE AGAINST CERTIFICATE OF APPROVAL LIMITS

Legend

- * non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

REGION: 3. CENTRAL

FOR COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
CLARKSON WPCP SOUTH-PEEL SYSTEM	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	
COOKSTOWN WPCP	M.O.E.	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	
FOX ST. WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	
INNISFIL (ALCONA) WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	
KESWICK WPCP	MUNICIPAL	Y	Y	Y	NR	Y	NR	NCA	Y	NCA	NCA	NO	
OAKVILLE SOUTH EAST WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	
OAKVILLE SOUTH WEST WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	
ORILLIA WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	*	NCA	NCA	NO	
PENETANGUISHENE WPCP MAIN ST PLANT	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	
STOUFFVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	NR	Y	NCA	NCA	NCA	NCA	NO	
TOTTENHAM WPCP - PHASE 1	MUNICIPAL	Y	Y	Y	NR	NR	Y	NCA	NCA	NCA	NCA	NO	

FOR NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipetad Compliance
BARRIE WPCP	MUNICIPAL	Y	Y	*	NR	NR	Y	NCA	*	NCA	NCA	YES	

APPENDIX A

SUMMARY OF STP PERFORMANCE
AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 4. SOUTHEASTERN

FOR COMPLYING PLANTS

Legend
- * non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
CHARLOTTENBURGH	M.O.E.	Y	Y	NA	Y	Y	NR	NCA	NCA	NCA	NCA	NO	
CORNWALL WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
WINCHESTER LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	

FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
BATH WPCP	MUNICIPAL	Y	Y	ID	Y	Y	ID	NCA	NCA	NCA	NCA	YES	91
GREEN CREEK WPCP	MUNICIPAL	*	*	*	Y	*	*	NCA	NCA	NCA	NCA	YES	94
MADOC LAGOON	M.O E	Y	*	Y	Y	*	Y	NCA	NCA	NCA	NCA	NO	

APPENDIX A

SUMMARY OF STP PERFORMANCE AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 5. NORTHEASTERN

FOR COMPLYING PLANTS

Legend
- * non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
CALLANDER LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
CONISTON WPCP	MUNICIPAL	Y	Y	NA	Y	Y	NR	NCA	NCA	NCA	NCA	NO	
LAKE TEMISKAMING NEW WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
LAKE TEMISKAMING OLD WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	Y	NCA	NCA	NO	
VAL GAGNE LAGOON	M.O.E.	Y	Y	NA	Y	Y	NR	NCA	NCA	NCA	NCA	YES	9107
WAWA LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	

FOR NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
HALLEBOURG LAGOON	MUNICIPAL	Y	Y	Y	ID	ID	ID	NCA	NCA	NCA	NCA	NO	
JOGUES LAGOON	MUNICIPAL	Y	*	Y	ID	ID	ID	NCA	NCA	NCA	NCA	YES	91
LEVACK WPCP	MUNICIPAL	Y	Y	*	Y	Y	*	NCA	NCA	NCA	NCA	YES	91
VAL-RITA LAGOON (MUN.1987)	MUNICIPAL	Y	*	Y	ID	ID	ID	NCA	NCA	NCA	NCA	YES	91

APPENDIX A

SUMMARY OF STP PERFORMANCE
AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 6. NORTHWESTERN

FOR COMPLYING PLANTS

Legend
- * non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
MANITOUWADGE LAGOON	MUNICIPAL	Y	Y	NA	NR	NR	NR	NCA	NCA	NCA	NCA	NO	

FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1990 concentration BOD	SS	TP	loading BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
THUNDER BAY WPCP	MUNICIPAL	Y	Y	*	NR	NR	NR	NCA	NCA	NCA	NCA	YES	

APPENDIX B

LIST OF COMPLYING STPs

ASSESSED AGAINST

MOE POLICY

EFFLUENT GUIDELINES

1990

(INCLUDING C OF A PLANTS)

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

REGION: 1. SOUTHWESTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	ADELAIDE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	AILSA CRAIG WPCP	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
C	ALVINSTON WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
C	AYLMER LAGOON	M.O.E.	Y	Y	Y	Y	*	*	*	YES	
	BELLE RIVER-MAIDSTONE WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	YES	
	BELMONT LAGOON	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
	BLYTH WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	BRIGDEN P.V. LAGOON	M.O.E.	Y	Y	Y	*	Y	Y	*	NO	
	BRIGHT'S GROVE LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	*	NO	
	BRUSSELS WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
C	CHATHAM WPCP	MUNICIPAL	Y	Y	Y	Y	*	*	Y	YES	92
	CHESLEY LAGOON	MUNICIPAL	Y	Y	Y	*	*	*	Y	NO	
	CLINTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	COLCHESTER SOUTH LAGOON	M.O.E.	Y	Y	Y	ID	NE	NE	NE	NO	
	COMBER LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	CORUNNA P.V. WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	COURTRIGHT WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	YES	
C	CRAIGLEIGH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	DUNDALK LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	DURHAM MUN WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	YES	
	DUTTON LAGOON	M.O.E.	Y	Y	Y	*	*	*	*	YES	
	EDGEWATER BEACH LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	ESSEX LAGOON N.E.	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	ESSEX LAGOON S.W.	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	GODERICH WPCP	MUNICIPAL	Y	Y	Y	*	*	*	*	NO	
	GREENWAY WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	Y	NO	
	HANOVER WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	HARROW LAGOON	M.O.E.	Y	Y	Y	Y	Y	*	Y	YES	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 1. SOUTHWESTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	HENSALL LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	HURON PARK WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	INGERSOLL OLD WPCP	M.O.E.	Y	Y	Y	*	Y	Y	*	YES	9101
	KILWORTH HEIGHTS WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	YES	
	LITTLE RIVER WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	LUCAN LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	MARKDALE LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	MCGREGOR LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	Y	Y	YES	
	MEAFORD WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	MERLIN PV LAGOON	M.O.E.	Y	Y	Y	*	*	*	*	NO	
	MILDMAY WPCP	M.O.E.	Y	Y	Y	*	Y	Y	*	YES	
	MITCHELL LAGOON	M.O.E.	Y	Y	Y	Y	*	*	Y	YES	
	NEUSTADT LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	YES	
	NORWICH LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	OIL CITY LAGOON	M.O.E.	Y	Y	Y	Y	ND	*	Y	NO	
	OWEN SOUND WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	YES	
	OXFORD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	PAISLEY WPCP	M.O.E.	Y	Y	Y	Y	Y	*	Y	YES	
	PARKHILL LAGOON	M.O.E.	Y	Y	Y	Y	*	Y	*	NO	
	PETROLIA WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
C	PORT BURWELL WPCP	M.O.E.	Y	Y	Y	*	*	*	*	YES	
	PORT ELGIN WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	PORT STANLEY LAGOON	M.O.E.	Y	Y	Y	*	Y	Y	*	NO	
	POTTERSBURG WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	RIDGETOWN LAGOON	M.O.E.	Y	Y	Y	*	*	*	*	NO	
	SEAFORTH LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	*	YES	
	SOUTHAMPTON WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	SOUTHLAND PARK WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	YES	

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

Legend

- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

REGION: 1. SOUTHWESTERN

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	ST MARYS WPCP	M.O.E.	Y	Y	Y	Y	*	Y	Y	NO	
C	ST THOMAS WPCP	MUNICIPAL	Y	Y	Y	*	*	Y	*	NO	
	STONEY POINT P.V. LAGOON	M.O.E.	Y	Y	Y	*	*	*	Y	NO	
	STRATFORD WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	YES	
	TARA LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
C	TAVISTOCK LAGOON	M.O.E.	Y	Y	Y	Y	*	*	*	NO	
	THAMESVILLE WPCP	M.O.E.	Y	Y	Y	Y	Y	*	Y	NO	
	THEDFORD LAGOON	M.O.E.	Y	Y	NA	Y	ND	*	*	NO	
	THORNBURY LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	TILLSONBURG WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	TOBERMORY LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	*	Y	YES	93
	VAN ASTRA WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	YES	
	VAUXHALL WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	WATFORD LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	WEST LORNE LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	*	YES	
	WESTERLY WPCP	MUNICIPAL	Y	Y	Y	*	Y	Y	Y	NO	
	WESTMINSTER WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
C	WHEATLY WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	WIARTON LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	YES	
	WINGHAM LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	WOODSTOCK WPCP	MUNICIPAL	Y	Y	Y	Y	*	Y	Y	NO	
	WYOMING WPCP	M.O.E.	Y	Y	Y	Y	Y	*	Y	NO	
	ZURICH LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

REGION: 2. WEST CENTRAL

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	AIRPORT WPCP (DISCHARGE TO A TILE FIELD)	MUNICIPAL	ND	ND	ND	ND	ND	ND	Y	NO	
C	ANGER AVE.WPCP	MUNICIPAL	Y	Y	Y	*	*	*	*	NO	
	ARTHUR LAGOON	M.O.E.	Y	Y	Y	Y	*	Y	*	NO	
	AYR PV WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	BADEN WPCP	M.O.E.	Y	Y	Y	Y	*	*	*	NO	
	BAKER ROAD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BIGGAR LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	BRANTFORD WPCP	M.O.E.	Y	Y	Y	*	*	*	Y	NO	
	CAINSVILLE LAGOON (SERVES INDUSTRY)	MUNICIPAL	Y	Y	Y	Y	ND	Y	Y	NO	
	CAYUGA WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	DELHI WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	DRAYTON LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	DUNDAS KING ST.WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	Y	YES	9005
	DUNNVILLE WPCP	M.O.E.	Y	Y	Y	*	Y	Y	*	NO	
C	ELMIRA WPCP (COMBINED FLOW)	M.O.E.	Y	Y	Y	*	*	*	*	NO	
	ELORA WPCP	MUNICIPAL	Y	Y	Y	*	Y	Y	*	NO	
	FERGUS WPCP	M.O.E.	Y	Y	Y	*	*	*	Y	YES	9008
	GRAND VALLEY WPCP	M.O.E.	Y	Y	Y	Y	*	Y	*	NO	
	GUELPH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	YES	9009
	HAGERSVILLE WPCP	M.O.E.	Y	Y	Y	Y	Y	*	Y	NO	
	HARRISTON LAGOON	M.O.E.	Y	Y	NA	Y	Y	*	Y	NO	
	JARVIS LAGOON	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
	KITCHENER WPCP	M.O.E.	Y	Y	Y	Y	*	*	Y	NO	
	MOUNT FOREST WPCP	MUNICIPAL	Y	Y	Y	Y	*	*	Y	NO	
	NEW HAMBURG LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
C	NIAGARA-ON-THE-LAKE WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	ORANGEVILLE WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	OSWEGO PARK LAGOON	M.O.E.	Y	Y	NA	Y	*	Y	Y	YES	92

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 2. WEST CENTRAL

Legend
- • non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	PALMERSTON WPCP	M.O.E.	Y	Y	NA	Y	•	•	•	NO	
	PARIS WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
C	PORT DALHOUSIE WPCP	MUNICIPAL	Y	Y	Y	•	Y	Y	Y	YES	
	PORT DOVER WPCP	M.O.E.	Y	Y	Y	•	•	•	•	NO	
C	PORT WELLER WPCP	MUNICIPAL	Y	Y	Y	•	Y	Y	•	NO	
	SEAWAY WPCP	MUNICIPAL	Y	Y	Y	•	•	Y	•	NO	
	SHELBURNE WPCP	M.O.E.	Y	Y	Y	•	•	Y	Y	YES	92
	SIMCOE WPCP	M.O.E.	Y	Y	Y	Y	•	Y	Y	NO	
	ST GEORGE PV WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	STELCO IND. PARK LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	STEVENSVILLE-DOUGLASTOWN LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	WATERDOWN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	•	•	NO	
	WATERFORD LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	•	NO	
	WATERLOO WPCP	M.O.E.	Y	Y	Y	•	•	•	•	YES	
C	WELLAND WPCP	MUNICIPAL	Y	Y	Y	•	Y	•	Y	YES	
	WOODWARD AVE. WPCP (OFFSITE CHEM. ADDN)	MUNICIPAL	Y	Y	Y	Y	•	•	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

REGION: 3. CENTRAL

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	ACTON WPCP + LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	ALLISTON WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	9010
	ANGUS WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
C	BARRIE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	YES	
	BEAVERTON RIVER 1 LAGOON (SUNDERLAND)	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	BEAVERTON RIVER 2 LAGOON (CANNINGTON)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BEETON LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	BOBCAGEON WPCP(SUMM.POP.SERVED(2480)	M.O.E.	Y	Y	Y	Y	Y	*	*	NO	
	BRACEBRIDGE LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BRACEBRIDGE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	BRADFORD WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	CAMPBELLFORD WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	NO	
	CARDIFF LAGOON	MUNICIPAL	Y	Y	NA	Y	ID	Y	Y	NO	
C	CLARKSON WPCP SOUTH-PEEL SYSTEM	M.O.E.	Y	Y	Y	Y	*	Y	Y	NO	
	COBOURG WPCP NO 2	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	COLBORNE WPCP	MUNICIPAL	Y	Y	Y	ID	Y	Y	Y	YES	
	COLDWATER WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	COLLINGWOOD WPCP	MUNICIPAL	Y	Y	Y	Y	*	*	*	NO	
C	COOKSTOWN WPCP	M.O.E.	Y	Y	Y	Y	ID	ID	NE	NO	
	FENELON FALLS WPCP(SUMMER POPSERVE 3136)	M.O.E.	Y	Y	Y	Y	Y	*	*	NO	
C	FOX ST. WPCP	MUNICIPAL	Y	Y	Y	*	Y	Y	Y	NO	
	GRAHAM CREEK WPCP (NEWCASTLE)	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	
	GRAVENHURST WPCP (DUAL OPERATION)	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	HALIBURTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HASTINGS WPCP	M.O.E.	Y	Y	Y	Y	*	*	Y	NO	
	HAVELOCK LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	HIGHLAND CREEK WPCP (SCARBOROUGH)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HOLLAND LANDING LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

REGION: 3. CENTRAL

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	HUMBER WPCP (ETOBICOKE)	MUNICIPAL	Y	Y	Y	Y	*	*	*	NO	
	HUNTSVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	INNISFIL (ALCONA) WPCP	M.O.E.	Y	Y	Y	Y	Y	ID	NE	NO	
C	KESWICK WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	KLEINBURG WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	
	LAKE SIMCOE LAGOON (BEAVERTON)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	YES	
	LAKEFIELD LAGOON	MUNICIPAL	Y	Y	NA	*	*	Y	*	YES	
	LAKEVIEW WPCP SOUTH-PEEL SYSTEM	M.O.E.	Y	Y	Y	ID	Y	*	Y	NO	
	LINDSAY LAGOON	MUNICIPAL	Y	Y	Y	*	*	*	Y	YES	
	MAIN WPCP (TORONTO)	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	MILLBROOK WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	MILTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	MINDEN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	MOUNT ALBERT WPCP	MUNICIPAL	Y	Y	Y	*	Y	ID	Y	NO	
	NONQUON RIVER LAGOON (PORT PERRY)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	NORTH TORONTO WPCP (EAST YORK)	MUNICIPAL	Y	Y	Y	*	*	Y	Y	NO	
C	OAKVILLE SOUTH EAST WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	OAKVILLE SOUTH WEST WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	OMEMEE LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
C	ORILLIA WPCP	MUNICIPAL	Y	Y	Y	Y	*	Y	Y	NO	
C	PENETANGUISHENE WPCP MAIN ST PLANT I1	MUNICIPAL	Y	Y	Y	*	*	Y	Y	NO	
	PETERBOROUGH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
	PORT CARLING WPCP	MUNICIPAL	Y	Y	Y	Y	ID	Y	*	NO	
	PORT DARLINGTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	YES	
	PORT MCNICOLL WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	PRINGLE CREEK WPCP NO 1	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	PRINGLE CREEK WPCP NO 2	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	SCHOMBERG LAGOON (OP.JAN 90)	MUNICIPAL	ND	ND	ND	NE	NE	NE	NE	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 3. CENTRAL

Legend

- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	SKYWAY WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
C	STOUFFVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	SUTTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
C	TOTTENHAM WPCP	MUNICIPAL	Y	Y	Y	Y	ID	NE	NE	NO	
	UXBRIDGE BROOK WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	YES	
	VICTORIA HARBOUR WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	WARKWORTH LAGOON	MUNICIPAL	ND	ND	ND	*	*	*	Y	NO	
	WASAGA BEACH WPCP (SUM.POP.SERV.73000)	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 4. SOUTHEASTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	BANCROFT WPCP	MUNICIPAL	Y	Y	NA	Y	ID	Y	Y	NO	
	BARRY'S BAY WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	BATAWA WPCP	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
C	BATH WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	91
	BELLEVILLE WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	NO	
	CANA WPCP	M.O.E.	Y	Y	NA	Y	*	Y	Y	NO	
	CASSELMAN LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
C	CHARLOTTENBURGH WPCP	M.O.E.	Y	Y	NA	ID	NE	NE	NE	NO	
	CHESTERVILLE LAGOON	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	CHUTE A BLONDEAU WPCP	M.O.E.	Y	Y	NA	Y	Y	*	NE	NO	
	COBDEN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	DEEP RIVER WPCP	MUNICIPAL	Y	Y	NA	*	Y	Y	Y	NO	
	DELORO WPCP	M.O.E.	Y	Y	NA	Y	ID	*	Y	NO	
	EMBRUN LAGOON	MUNICIPAL	ND	ND	ND	ND	Y	ID	NE	YES	
	GANANOQUE LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	92
	HAWKESBURY WPCP	M.O.E.	Y	Y	Y	Y	Y	*	*	NO	
	INGLESIDE WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	KILLALOE STN.WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	KINGSTON WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	KINGSTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	LANCASTER LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	LANSDOWNE LAGOON	M.O.E.	Y	Y	NA	NDD	NDD	Y	Y	NO	
	LONG SAULT WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	L'ORIGNAL WPCP	M.O.E.	Y	Y	NA	Y	Y	*	*	NO	
C	MADOC LAGOON	M.O.E.	Y	Y	Y	Y	*	Y	*	NO	
	MARMORA WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	Y	NO	
	MAXVILLE WASTE STAB POND	M.O.E.	ND	ND	ND	ND	NE	NE	NE	NO	
	MUNSTER LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	ND	*	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 4. SOUTHEASTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
NAPANEE WPCP	MUNICIPAL	Y	Y	Y	*	*	*	*	NO	
PERTH LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
PETAWAWA WPCP	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
PICTON WPCP	MUNICIPAL	Y	Y	Y	Y	*	*	Y	NO	
PRESCOTT WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
RENFREW WPCP	MUNICIPAL	Y	Y	Y	Y	Y	*	*	NO	
ROCKLAND LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
ST.ISIDORE LAGOON	M.O.E.	Y	Y	NA	*	Y	*	*	NO	
TRENTON WPCP	M.O.E.	Y	Y	Y	Y	*	Y	Y	NO	
TWEED LAGOON	M.O.E.	Y	Y	Y	*	*	Y	Y	NO	
VANKLEEK HILL LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	*	NO	
WESTPORT LAGOON	M.O.E.	Y	Y	Y	*	*	*	Y	NO	
WILLIAMSBURG LAGOON	MUNICIPAL	Y	Y	NA	ND	ID	ID	NE	NO	
C WINCHESTER LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE AGAINST MOE POLICY EFFLUENT GUIDELINES FOR COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend

- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	BLACK RIVER RAMORE (OP MAY 90)	M.O.E.	ND	ND	ND	NE	NE	NE	NE	NO	
	BLIND RIVER WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	BOB'S LAKE LAGOON	MUNICIPAL	Y	Y	NA	*	*	*	*	NO	
	BRUCE MINES LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	
	BURKS FALLS LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
C	CALLANDER LAGOON	M.O.E.	Y	Y	Y	*	Y	*	Y	NO	
	CAPREOL LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	Y	Y	NO	
	CECILE TRAILER PARK LAGOON	M.O.E.	Y	Y	NA	ID	ID	ID	NE	NO	
	CHAPLEAU LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	*	NO	
	CHELMSFORD LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	CHELMSFORD WPCP	MUNICIPAL	Y	Y	Y	*	Y	Y	Y	NO	
C	CONISTON WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	DESBARATS	MUNICIPAL	Y	Y	Y	NE	NE	NE	NE	NO	
	DOWLING WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	DUBREUILVILLE LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	NE	NO	
	ESTEN LAKE WPCP	MUNICIPAL	Y	Y	Y	*	Y	Y	*	NO	
	FAUQUIER LAGOON	M.O.E.	Y	Y	NA	Y	Y	ID	Y	NO	
	GARSON LAGOON (STANDBY)	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	GLACKMEYER LAGOON	MUNICIPAL	Y	Y	Y	NE	NE	NE	NE	NO	
	GORE BAY LAGOON	M.O.E.	Y	Y	NA	Y	Y	*	*	NO	
C	HALLEBOURG LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	ID	NE	NO	
	HAMNER,VAL-CARON,VAL-THERESE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	*	NO	
	HEARST LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	HORNEPAYNE WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	KAPUSKASING WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	KILLARNEY LAGOON	M.O.E.	Y	Y	Y	ND	ND	NE	NE	NO	
	KIRKLAND LAKE WPCP	M.O.E.	Y	Y	Y	*	*	*	*	NO	
C	LAKE TEMISKAMING NEW WPCP	M.O.E.	Y	Y	Y	*	Y	*	*	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
C	LAKE TEMISKAMING OLD WPCP	M.O.E.	Y	Y	Y	*	*	Y	*	NO	
	LARDER LAKE TOWNSITE WPCP	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	ID	Y	NO	
	LATCHFORD WPCP	M.O.E.	Y	Y	NA	Y	Y	*	Y	NO	
C	LEVACK WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	91
	LITTLE CURRENT LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	LIVELY WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	YES	9203
	MANITOWANING LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	*	YES	
	MATHESON WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	MATTAGAMI WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	MATTAWA LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	YES	
	MATTICE LAGOON	M.O.E.	Y	Y	NA	Y	Y	ID	Y	YES	
	MOONBEAM LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	MOOSONEE WPCP (NORTH)	M.O.E.	Y	Y	NA	Y	ID	Y	Y	NO	
	NOELVILLE LAGOON	M.O.E.	Y	Y	NA	Y	Y	ND	Y	NO	
	NORTH BAY WPCP	M.O.E.	Y	Y	Y	Y	*	*	*	NO	
	NORTH COBALT LAGOON	M.O.E.	Y	Y	NA	Y	*	Y	Y	YES	
	NORTH GOWARD LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	ONAPING WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	PARRY SOUND WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	*	NO	
	SAULT STE.MARIE WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	9112
	SMOOTH ROCK FALLS WPCP	M.O.E.	Y	Y	NA	ID	Y	Y	Y	NO	
	STURGEON FALLS WPCP	M.O.E.	Y	Y	Y	*	*	*	Y	NO	
	SUDBURY WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	SUNDRIDGE LAGOON	M.O.E.	Y	Y	Y	Y	*	Y	Y	YES	
	SWASTIKA WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	*	NO	
	TEMAGAMI LAGOON	M.O.E.	NDD	NDD	NDD	ND	ND	ND	Y	YES	
	THESSALON LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
C	VAL GAGNE LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	9107

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend

- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

Plant Name	Operation Authority	Compliance Status 1990 BOD	1990 SS	1990 TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
WAHNAPITAE LAGOON	MUNICIPAL	Y	Y	NA	ND	Y	Y	Y	NO	
WALDEN WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
WARREN LAGOON	M.O.E.	Y	Y	Y	ND	ND	ND	Y	NO	
WEST END WPCP	M.O.E.	Y	Y	Y	*	Y	*	*	NO	
WHITE RIVER LAGOON	M.O.E.	NDD	NDD	NDD	ND	ND	ND	NE	YES	
WHITNEY & TISDALE WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR COMPLYING PLANTS

REGION: 6. NORTHWESTERN

Legend
- • non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	ATIKOKAN WPCP	M.O.E.	Y	Y	Y	•	•	•	•	NO	
	BALMERTOWN WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	BARWICK (HAMLET OF)	MUNICIPAL	Y	Y	NA	NE	NE	NE	NE	NO	
	BEARDMORE LAGOON	M.O.E.	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	CARAMAT	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	COCHENOUR LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	DRYDEN WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	EAR FALLS WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	EMO LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	YES	9103
	FORT FRANCES WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	•	NO	
	GERALDTON WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	IGNACE WPCP	M.O.E.	Y	Y	Y	Y	Y	Y	•	NO	
	KENORA WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	LONGLAC WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
C	MANITOUWADGE LAGOON	MUNICIPAL	Y	Y	NA	Y	Y	•	NE	NO	
	MARATHON WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	NAKINA WPCP (NO PH REMOVAL AUG.18 1987)	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	NIPIGON WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	PICKLE LAKE WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	RAINY RIVER LAGOON	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	RED LAKE WPCP	M.O.E.	Y	Y	NA	Y	Y	Y	Y	NO	
	RED ROCK WPCP	MUNICIPAL	Y	Y	NA	Y	Y	Y	Y	NO	
	SIOUX LOOKOUT WPCP	MUNICIPAL	Y	Y	NA	•	Y	Y	Y	YES	
	TERRACE BAY LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	ND	Y	NO	
	TERRACE BAY WPCP	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	Y	Y	NO	

APPENDIX C

LIST OF NON-COMPLYING STPs

ASSESSED AGAINST

MOE POLICY

EFFLUENT GUIDELINES

1990

(INCLUDING C OF A PLANTS)

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 1. SOUTHWESTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID Insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year
- non-compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
C	AMHERSTBURG WPCP	MUNICIPAL	ID	Y	Y	Y	Y	*	*	YES	
	BLENHEIM LAGOON	M.O.E.	Y	*	Y	*	*	*	*	YES	9201
	COTTAM LAGOON	M.O.E.	Y	*	Y	*	*	*	Y	YES	9201
	DRESDEN WPCP	M.O.E.	Y	Y	*	*	*	*	*	YES	9101
C	EXETER LAGOON	MUNICIPAL	Y	ID	Y	Y	Y	Y	*	YES	
	FOREST LAGOON	M.O.E.	Y	*	NA	*	*	*	*	YES	9101
	GLENCOE LAGOON	M.O.E.	Y	*	Y	*	*	Y	Y	YES	9101
	GRAND BEND LAGOON	M.O.E.	Y	*	Y	*	*	*	*	YES	
	INGERSOLL NEW WPCP	M.O.E.	Y	Y	*	*	*	*	*	YES	9101
	KINCARDINE LAGOON	MUNICIPAL	Y	Y	*	*	*	ID	*	YES	94
C	KINGSVILLE LAGOON	MUNICIPAL	Y	*	*	ID	*	*	*	YES	
	LEAMINGTON WPCP	MUNICIPAL	Y	*	*	*	Y	Y	*	YES	92
	LISTOWEL LAGOON CONT DIS (SUMMER SPRAY)	M.O.E.	Y	Y	*	Y	*	*	*	YES	9101
	LITTLE RIVER WPCP # 2 (OP.JUNE 90)	MUNICIPAL	ID	ID	ID	NE	NE	NE	NE	NO	
	MILVERTON LAGOON	MUNICIPAL	Y	*	Y	Y	Y	Y	Y	YES	
	MITCHELL'S BAY LAGOON	M.O.E.	Y	*	Y	*	*	ND	*	YES	9101
	OIL SPRINGS LAGOON	M.O.E.	Y	*	Y	*	ND	*	Y	YES	9101
	PLATTSVILLE LAGOON	M.O.E.	Y	*	Y	Y	Y	Y	*	YES	
	POINT EDWARD WPCP	M.O.E.	*	*	*	*	*	*	*	YES	9301
	PORT LAMBTON LAGOON	M.O.E.	Y	*	Y	Y	*	*	*	YES	9101
	RODNEY LAGOON	M.O.E.	Y	*	Y	*	*	*	*	YES	9201
	SARNIA WPCP	MUNICIPAL	ID	Y	*	*	ID	Y	Y	YES	91
	SOMBRA LAGOON	M.O.E.	Y	*	Y	Y	*	*	Y	YES	9101
	STRATHROY LAGOON	MUNICIPAL	Y	Y	*	*	ID	*	*	YES	9104
	TILBURY LAGOON	MUNICIPAL	ID	ID	ID	ID	*	ID	Y	YES	
	WALKERTON WPCP	MUNICIPAL	Y	Y	*	Y	Y	*	*	YES	
	WALLACEBURG WPCP	M.O.E.	Y	Y	*	*	*	Y	*	YES	9301

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 2. WEST CENTRAL

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year
- non-compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
C	CALEDONIA WPCP	M.O.E.	*	Y	*	Y	Y	*	*	YES	9101
	CRYSTAL BEACH WPCP	MUNICIPAL	Y	Y	*	*	*	*	*	YES	92
	GALT WPCP	M.O.E.	Y	Y	*	Y	Y	Y	Y	YES	
	HESPELER WPCP	M.O.E.	Y	*	*	*	*	*	*	YES	
	PORT ROWAN LAGOON	M.O.E.	Y	*	Y	Y	Y	*	Y	YES	
	PRESTON WPCP	M.O.E.	Y	Y	*	*	Y	Y	*	YES	92
	SMITHVILLE LAGOON	MUNICIPAL	ID	ID	NA	Y	*	*	Y	NO	
C	STAMFORD WPCP	MUNICIPAL	Y	Y	*	Y	Y	*	*	YES	91
	ST.JACOBS PV WPCP	M.O.E.	Y	Y	*	*	*	*	*	YES	9505
	TOWNSEND LAGOON	M.O.E.	Y	*	Y	ND	ID	ND	Y	YES	9112
	WELLESLEY WPCP	M.O.E.	Y	Y	*	Y	Y	*	*	YES	

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 3. CENTRAL

Legend

*	non-compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
	non-compliance for 3 consecutive years

Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
BALA WPCP	MUNICIPAL	Y	*	Y	*	*	*	*	YES	
BRIGHTON LAGOON	MUNICIPAL	Y	Y	*	*	*	*	*	YES	
COBOURG WPCP NO 1	MUNICIPAL	Y	Y	*	*	*	*	*	YES	9006
CORBETT CREEK WPCP	MUNICIPAL	Y	Y	*	Y	*	*	*	YES	
DUFFIN CREEK WPCP (YORK-DURHAM)	MUNICIPAL	*	*	*	*	*	Y	*	YES	91
ELMVALE LAGOON	MUNICIPAL	*	Y	NA	Y	ID	Y	Y	YES	
GEORGETOWN WPCP	MUNICIPAL	Y	Y	*	*	Y	Y	Y	YES	
HARMONY CREEK 1&2 COMBINED EFFLUENT	MUNICIPAL	*	Y	Y	*	Y	Y	*	YES	91
MIDLAND WPCP	MUNICIPAL	Y	Y	*	*	Y	*	*	YES	
NORWOOD WPCP	M.O.E.	Y	Y	*	Y	Y	Y	*	YES	
PORT HOPE WPCP	MUNICIPAL	Y	Y	*	Y	Y	Y	*	YES	
STAYNER LAGOON	MUNICIPAL	Y	*	Y	*	*	*	*	YES	
WOODLAND ACRES WPCP	M.O.E.	Y	Y	*	Y	Y	Y	Y	YES	9008

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 4. SOUTHEASTERN

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year
- non-compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	ALEXANDRIA LAGOON	M.O.E.	Y	Y	*	Y	Y	*	*	YES	
	ALFRED LAGOON	M.O.E.	Y	*	NA	*	Y	Y	Y	YES	
	ALMONTE LAGOON	M.O.E.	Y	Y	*	Y	*	Y	*	YES	94
	AMHERSTVIEW LAGOON	M.O.E.	Y	*	NA	*	*	*	*	YES	
	ARNPRIOR WPCP	MUNICIPAL	*	*	Y	*	*	*	*	YES	94
	BROCKVILLE WPCP	MUNICIPAL	Y	*	*	*	*	*	*	YES	
	CARLETON PLACE WPCP	M.O.E.	*	*	*	*	*	*	*	YES	
	CHALK RIVER WPCP	M.O.E.	*	*	*	Y	Y	Y	Y	YES	
C	CORNWALL WPCP	MUNICIPAL	*	Y	Y	Y	*	*	*	NO	
	DESERONTO WPCP	M.O.E.	Y	Y	*	Y	Y	Y	Y	YES	
	EGANVILLE WPCP	M.O.E.	Y	Y	*	Y	Y	Y	Y	YES	
	FRANKFORD WPCP	M.O.E.	Y	Y	*	Y	Y	Y	Y	YES	91
C	GREEN CREEK WPCP	MUNICIPAL	Y	*	*	*	*	*	*	YES	94
	IROQUOIS WPCP	MUNICIPAL	Y	*	*	ID	*	*	Y	YES	
	KEMPTVILLE WPCP (TERTIARY PROPSED)	MUNICIPAL	*	*	*	*	*	*	*	YES	
	MERRICKVILLE WPCP	M.O.E.	Y	Y	*	*	*	*	*	YES	9112
	MORRISBURG WPCP	M.O.E.	Y	*	NA	*	Y	ID	Y	YES	91
	ODESSA WPCP	M.O.E.	Y	Y	*	*	*	Y	*	YES	
	PEMBROKE WPCP	MUNICIPAL	Y	Y	*	Y	Y	Y	Y	NO	
	PLANTAGENET LAGOON	M.O.E.	Y	*	Y	Y	Y	Y	Y	YES	9201
	RUSSELL LAGOON	M.O.E.	Y	*	Y	*	*	*	Y	NO	
	SMITHS FALLS WPCP	MUNICIPAL	Y	*	*	*	*	*	*	YES	9301
	STIRLING LAGOON	MUNICIPAL	Y	Y	*	*	*	ID	Y	YES	91
	WATTS CREEK WPCP	MUNICIPAL	Y	Y	*	*	Y	Y	Y	YES	94
	WELLINGTON WPCP	MUNICIPAL	Y	Y	*	*	*	Y	Y	YES	
	WENDOVER WPCP (OP. SEP 90)	M.O.E.	ID	ID	NA	NE	NE	NE	NE	YES	

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 5. NORTHEASTERN

Legend

*	non-compliance for that year
C	C of A plants
Y	compliance for that year
ID	Insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
	non-compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	AZILDA WPCP	MUNICIPAL	Y	Y	*	Y	Y	Y	Y	YES	92
	BELLE VALLEE LAGOON	MUNICIPAL	Y	*	NA	ND	Y	Y	*	YES	92
	COCHRANE WPCP	MUNICIPAL	ID	ID	NA	ID	ID	*	*	YES	92
	EARLTON LAGOON	MUNICIPAL	*	*	NA	ID	ID	Y	Y	YES	94
	ENGLEHART LAGOON	M.O.E.	Y	Y	*	*	*	Y	Y	YES	
	ESPANOLA WPCP	M.O.E.	Y	*	NA	*	Y	Y	Y	YES	
	FALCONBRIDGE TOWNSITE WPCP	MUNICIPAL	*	*	NA	*	*	*	*	YES	9012
	HARTY LAGOON	MUNICIPAL	Y	Y	*	*	ND	ND	Y	YES	91
	IROQUOIS FALLS WPCP	M.O.E.	*	Y	NA	Y	Y	Y	Y	YES	
C	JOGUES LAGOON	MUNICIPAL	Y	*	Y	ND	ND	ID	NE	YES	91
	KAPUSKASING WEST END WPCP	M.O.E.	ID	*	NA	ND	ID	NE	NE	YES	
	MOOSONEE WPCP (OLD TOWNSITE)	M.O.E.	*	Y	NA	*	ID	Y	Y	YES	
	NEW LISKEARD LAGOON	MUNICIPAL	Y	Y	*	*	Y	*	Y	YES	
	OPASATIKA LAGOON	M.O.E.	Y	*	Y	ND	ND	ID	Y	YES	
	PORQUIS JUNCTION LAGOON	MUNICIPAL	Y	*	NA	Y	Y	*	Y	YES	92
	POWASSAN LAGOON	M.O.E.	Y	Y	*	Y	*	Y	Y	YES	
	ST.CHARLES LAGOON	M.O.E.	Y	Y	*	*	*	ND	Y	YES	
C	VAL-RITA LAGOON	MUNICIPAL	Y	*	Y	Y	*	*	Y	YES	91
	VERNER LAGOON	M.O.E.	Y	Y	*	Y	*	*	Y	YES	
	VIRGINIATOWN AND KEARNS WPCP	MUNICIPAL	Y	*	NA	*	*	*	*	YES	92
C	WAWA LAGOON	M.O.E.	Y	Y	*	*	Y	ND	Y	YES	
	WEBBWOOD LAGOON	M.O.E.	Y	*	NA	Y	*	ND	Y	YES	

APPENDIX C

SUMMARY OF STP PERFORMANCE
AGAINST MOE POLICY EFFLUENT GUIDELINES
FOR NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Legend
- * non-compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year
- non-compliance for 3 consecutive years

REGION: 6. NORTHWESTERN

	Plant Name	Operation Authority	Compliance Status 1990 BOD	SS	TP	1989	1988	1987	1986	Remedial Program	Anticipated Compliance
	MADSEN WPCP	M.O.E.	*	*	NA	ND	ND	Y	Y	YES	
	SCHREIBER WPCP	M.O.E.	*	Y	NA	Y	*	*	Y	YES	91
C	THUNDER BAY WPCP	MUNICIPAL	Y	Y	*	*	*	*	*	YES	

APPENDIX D

REPORTED

BYPASS OCCURRENCE

1990

APPENDIX D

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 1. SOUTHWESTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
BELLE RIVER-MAIDSTONE WPCP	5.673	8	0	79.3	0.0	45.063	0.000	45.06	2.2
BLYTH WPCP	0.344	2	0	12.0	0.0	0.175	0.000	0.18	0.1
CLINTON WPCP	2.465	7	0	103.0	0.0	44.391	0.000	44.39	4.9
COURTRIGHT WPCP	0.583	1	0	3.5	0.0	0.455	0.000	0.46	0.2
CRAIGLEIGH WPCP	1.356	0	1	0.0	1.0	0.000	0.271	0.27	0.1
GODERICH WPCP	8.433	30	34	85.9	85.9	0.000	0.000	0.00	0.0
GREENWAY WPCP	133.768	17	68	221.0	820.9	283.000	986.790	1269.79	2.6
LITTLE RIVER WPCP	28.775	91	0	1050.0	0.0	885.000	0.000	885.00	8.4
MEAFORD WPCP	3.167	5	0	26.5	0.0	5.961	0.000	5.96	0.5
MILDMAY WPCP	0.751	1	0	1.0	0.0	0.032	0.000	0.03	0.0
OWEN SOUND WPCP	15.490	8	0	74.6	0.0	16.560	0.000	16.56	0.3
OXFORD WPCP	6.140	4	0	14.0	0.0	2.228	0.000	2.23	0.1
POTTERSBURG WPCP	22.493	38	0	257.8	0.0	89.766	0.000	89.77	1.1
ST THOMAS WPCP	18.408	5	61	265.4	1283.8	23.233	75.887	99.12	1.5
STRATFORD WPCP	28.028	18	45	78.4	524.6	144.269	516.062	660.33	6.5
VAN ASTRA WPCP	0.982	12	0	155.3	0.0	6.549	0.000	6.55	1.8
VAUXHALL WPCP	17.468	0	0	21.5	0.0	0.000	0.000	0.00	0.0
WALKERTON WPCP	5.082	6	0	96.5	0.0	11.010	0.000	11.01	0.6
WALLACEBURG WPCP	7.724	7	0	35.3	0.0	3.093	0.000	3.09	0.1
WESTERLY WPCP	135.508	34	0	247.0	0.0	1303.600	0.000	1303.60	2.6
TOTAL	443	292	209	2828	2716	2,864	1,579	4,443	2.8

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 2. WEST CENTRAL

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
CALEDONIA WPCP	2.958	0	7	0.0	301.5	0.000	41.250	41.25	3.6
CAYUGA WPCP	0.684	0	6	0.0	255.1	0.000	21.697	21.70	8.7
CRYSTAL BEACH WPCP	5.344	14	138	16.6	0.0	2.432	100.427	102.86	5.3
DELHI WPCP	2.356	0	4	0.0	57.4	0.000	11.758	11.76	1.4
DUNDAS KING ST.WPCP	14.789	0	2	0.0	17.0	0.000	16.480	16.48	0.3
GALT WPCP	33.452	2	0	0.3	0.0	10.820	0.000	10.82	0.1
MOUNT FOREST WPCP	2.351	22	0	350.0	0.0	19.358	0.000	19.36	2.3
ORANGEVILLE WPCP	9.562	1	0	6.0	0.0	2.000	0.000	2.00	0.1
PORT DALHOUSIE WPCP	45.887	39	0	591.6	0.0	740.169	0.000	740.17	4.4
PORT WELLER WPCP	51.942	29	0	340.4	0.0	345.909	0.000	345.91	1.6
PRESTON WPCP	9.975	1	0	0.2	0.0	0.002	0.000	0.00	0.0
STAMFORD WPCP	64.320	0	0	139.0	0.0	0.000	0.000	0.00	0.0
WOODWARD AVE.WPCP	334.633	0	0	348.4	705.4	0.000	0.000	0.00	0.0
TOTAL	576	108	157	1795	1336	1,121	192	1,312	0.6

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 3. CENTRAL

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
CLARKSON WPCP SOUTH-PEEL SYSTEM	93.443	1	0	0.0	0.0	0.000	0.000	0.00	0.0
COLBORNE WPCP	1.367	1	1	0.0	0.0	0.000	0.000	0.00	0.0
CORBETT CREEK WPCP	21.363	0	5	0.0	24.8	0.000	66.216	66.22	0.8
GEORGETOWN WPCP	10.846	0	0	4.0	23.0	0.000	0.000	0.00	0.0
HARMONY CR WPCP NO 2	29.320	0	1	0.0	10.0	0.000	8.293	8.29	0.1
HUMBER WPCP (ETOBICOKE)	419.455	1	15	6.2	38.4	0.000	64.030	64.03	0.0
HUNTSVILLE WPCP	5.301	4	1	8.8	48.0	14.377	7.295	21.67	1.1
MAIN WPCP (TORONTO)	787.250	1	13	6.5	60.1	0.000	333.700	333.70	0.1
MILTON WPCP	10.933	2	0	15.0	0.0	4.168	0.000	4.17	0.1
NORTH TORONTO WPCP (EAST YORK)	35.460	1	1	0.0	0.0	0.000	0.000	0.00	0.0
OAKVILLE SOUTH WEST WPCP	42.260	1	8	0.8	0.0	8.000	376.733	384.73	2.5
ORILLIA WPCP	21.301	0	10	0.0	941.0	0.000	431.474	431.47	5.5
PENETANGUISHENE WPCP MAIN ST PLANT I1	2.557	34	0	123.8	0.0	12.698	0.000	12.70	1.4
PETERBOROUGH WPCP	53.044	0	27	0.0	146.0	0.000	80.577	80.58	0.4
PORT DARLINGTON WPCP	7.323	0	4	0.0	75.0	0.000	54.212	54.21	2.0
PORT MCNICOLL WPCP	0.847	1	0	4.0	0.0	0.063	0.000	0.06	0.0
PRINGLE CREEK WPCP NO 1	2.891	0	8	0.0	64.6	0.000	13.787	13.79	1.3
PRINGLE CREEK WPCP NO 2	5.063	2	0	61.0	0.0	4.773	0.000	4.77	0.3
SKYWAY WPCP	78.589	0	45	0.0	310.0	0.000	390.675	390.68	1.4
VICTORIA HARBOUR WPCP	0.701	0	0	1.4	0.0	0.000	0.000	0.00	0.0
TOTAL	1629	49	139	229	1741	44	1,827	1,871	0.3

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 4. SOUTHEASTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
ARNPRIOR WPCP	6.151	15	0	14.1	0.0	2.146	0.000	2.15	0.1
BATAWA WPCP	0.444	0	33	0.0	534.4	0.000	32.860	32.86	20.3
BELLEVILLE WPCP	32.847	69	170	86.0	0.0	147.000	1244.500	1391.50	11.8
BROCKVILLE WPCP	18.626	1	0	0.0	0.0	0.000	0.000	0.00	0.0
CARLETON PLACE WPCP	5.484	18	95	223.0	1650.8	27.163	1380.000	1407.16	70.3
COBDEN WPCP	0.731	4	0	17.0	0.0	0.730	0.000	0.73	0.3
DELORO WPCP	0.000	102	32	1117.8	153.6	267.550	36.863	304.41	47.8 *
DESERONTO WPCP	1.607	22	1	174.5	0.0	40.100	0.000	40.10	6.8
GREEN CREEK WPCP	480.817	0	0	9.8	0.0	0.000	0.000	0.00	0.0
HAWKESBURY WPCP	9.530	72	1	74.9	0.7	353.441	3.627	357.07	10.3
INGLESIDE WPCP	1.209	4	0	22.4	0.0	4.801	0.000	4.80	1.1
KEMPTVILLE WPCP (TERTIARY PROPSED)	2.069	3	0	2.0	0.0	0.345	0.000	0.35	0.0
KINGSTON WPCP	20.661	0	46	0.0	205.0	0.000	0.000	0.00	0.0
KINGSTON WPCP	63.024	1	0	6.0	0.0	13.635	0.000	13.64	0.1
LONG SAULT WPCP	1.756	6	0	0.0	0.0	6.545	0.000	6.55	1.0
L'ORIGNAL WPCP	0.933	8	0	138.0	0.0	10.616	0.000	10.62	3.1
NAPANEE WPCP	7.702	17	27	96.0	0.0	21.100	70.400	91.50	3.3
ODESSA WPCP	1.491	0	0	132.5	0.0	0.000	0.000	0.00	0.0
PETAWAWA WPCP	4.650	37	9	0.0	0.0	0.000	0.000	0.00	0.0
PICTON WPCP	3.477	0	11	0.0	141.4	0.000	33.402	33.40	2.8
PRESCOTT WPCP	4.935	3	0	0.0	0.0	0.099	0.000	0.10	0.0
WATTS CREEK WPCP	27.800	2	146	0.0	901.7	0.000	396.000	396.00	3.9
WELLINGTON WPCP	0.733	0	4	0.0	11.0	0.000	0.315	0.32	0.1
* Expressed as % of design flow									
TOTAL	697	384	575	2114	3599	895	3,198	4,093	1.8

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 5. NORTHEASTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
AZILDA WPCP	2.490	2	0	306.0	0.0	23.190	0.000	23.19	2.8
BLIND RIVER WPCP	2.022	7	0	88.5	0.0	10.705	0.000	10.71	1.5
CHELMSFORD WPCP	5.375	0	1	0.0	43.0	0.000	7.953	7.95	0.4
CONISTON WPCP	1.644	3	0	168.8	0.0	17.635	0.000	17.64	2.9
HORNEPAYNE WPCP	0.920	8	0	120.0	0.0	11.035	0.000	11.04	3.3
KIRKLAND LAKE WPCP	12.315	19	0	201.8	0.0	57.262	0.000	57.26	1.3
MATHESON WPCP	0.653	10	0	153.5	0.0	10.160	0.000	10.16	4.3
NORTH BAY WPCP	35.664	0	1	0.0	1.5	0.000	2.800	2.80	0.0
PARRY SOUND WPCP	8.262	0	1	0.0	5.0	0.000	50.120	50.12	1.7
SUDBURY WPCP	66.319	4	1	0.0	0.0	70.400	13.300	83.70	0.3
TOTAL	136	53	4	1039	50	200	74	275	0.8

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1990

REGION : 6. NORTHWESTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Times days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
ATIKOKAN WPCP	2.572	9	0	30.6	0.0	2.417	0.000	2.42	0.3
GERALDTON WPCP	1.926	14	0	186.3	0.0	10.005	0.000	10.01	1.4
RED LAKE WPCP	1.847	0	3	0.0	32.0	0.000	0.868	0.87	0.1
RED ROCK WPCP	0.865	1	0	2.5	0.0	0.100	0.000	0.10	0.0
TOTAL	7	24	3	219	32	13	1	13	0.5

APPENDIX E

ADDRESSES AND PHONE NUMBERS

OF MOE

REGIONAL AND DISTRICT OFFICES

1990

APPENDIX E

ADDRESSES AND PHONE NUMBERS OF MOE REGIONAL AND DISTRICT OFFICES

1. SOUTHWESTERN REGION

REGIONAL OFFICE

London
985 Adelaide St. South
N6E 1V3
(519)–661–2200

DISTRICT OFFICES

London South
985 Adelaide St. South
N6E 1V3
(519)–661–2200

London North
985 Adelaide St. South
N6E 1V3
(519)–661–2200

Owen Sound
1180 20th St. East
N4K 6H6
(519)–371–2901

Sarnia
265 North Front St.
N7T 7X1
(519)–336–4030

Windsor
250 Windsor Avenue
N9A 6V9
(519)–254–2546

SUB–OFFICES

Chatham
c/o Ministry of
Agriculture & Food
435 Grand Avenue West
N7M 5L1
(519)–354–9434

Clinton
c/o Ministry of
Agriculture & Food
P.O. Box 688
N0M 1L0
(519)–482–3428

2. WEST CENTRAL REGION

REGIONAL OFFICE

Hamilton
119 King St. West
P.O. Box 2112
L8N 3Z9
(416)–521–7640

DISTRICT OFFICES

Cambridge
400 Clyde Road
P.O. Box 219
N1R 5T8
(519)–653–1511

Haldimand–Norfolk/Brant
119 King St. West
P.O. Box 2112
L8N 3Z9
(519)–521–7593

Hamilton–Wentworth
119 King St. West
P.O. Box 2112
L8N 3Z9
(519)–521–7732

Welland
637–641 Niagara St. West
L3C 1L9
(416)–384–9896

3. CENTRAL REGION

REGIONAL OFFICE

Toronto
7 Overlea Blvd.
M4E 1A8
(416)–424–3000

DISTRICT OFFICES

Barrie
12 Fairview Road
L4N 4P3
(705)–726–1730

Halton–Peel
1235 Trafalgar Road
Suite 401, Oakville
L6H 3P1
(416)–844–5747

Metro Toronto East
7 Overlea Blvd.
M4E 1A8
(416)–467–3013

Metro Toronto West
7 Overlea Blvd.
M4E 1A8
(416)–467–3007

Muskoka–Haliburton
483 Bethune Drive
Gravenhurst
P0C 1G0
(705)–687–6647

Peterborough
139 George St. North
K9J 3G6
(705)–743–2792

York–Durham
7 Overlea Blvd.
M4E 1A8
(416)–467–3009

APPENDIX E – continued

ADDRESSES AND PHONE NUMBERS OF MOE REGIONAL AND DISTRICT OFFICES

4. SOUTHEASTERN REGION

REGIONAL OFFICE

Kingston
133 Dalton Street
Box 820
K7L 4X6
(613)–549–4000

DISTRICT OFFICES

Cornwall
205 Amelia Street
K6H 3P3
(613)–933–7402

Kingston
133 Dalton Street
Box 820
K7L 4X6
(613)–549–4000

Ottawa
2378 Holly Lane
K1V 7P1
(613)–521–3450

SUB–OFFICES

Belleville
15 Victoria Avenue
K8N 1Z5
(613)–962–9208

Pembroke
1000 MacKay Street
K8B 1A3
(613)–732–3643

5. NORTHEASTERN REGION

REGIONAL OFFICE

Sudbury
199 Larch Street
P3E 5P9
(705)–675–4501

DISTRICT OFFICES

North Bay
1500 Fisher Street
P1B 2H3
(705)–476–1001

Sault Ste. Marie
445 Albert St. East
P6A 2J9
(705)–949–4640

Sudbury
199 Larch Street
P3E 5P9
(705)–675–4501

Timmins
83 Algonquin Blvd. West
P4N 2R4
(705)–268–3222

SUB–OFFICES

Parry Sound
74 Church Street
P2A 1Z1
(705)–746–2139

6. NORTHWESTERN REGION

REGIONAL OFFICE

Thunder Bay
435 James St. South
P.O. Box 5000
P7C 5G8
(807)–475–1205

DISTRICT OFFICES

Kenora
808 Robertson Street
P9N 1X9
(807)–468–2725

Thunder Bay
435 James St. South
P.O. Box 5000
P7C 5G8
(807)–475–1205